

# NERL/ERD Publications

Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)

Jan 1, 2003 - Dec 31, 2003

*Presented Published*

## ABSTRACT/ORAL

Zepp, R.G., Moran, M.A., and Koopmans, D. Photoreactivity of chromophoric dissolved organic matter (CDOM) derived from decomposition of various vascular plant and algal sources. Presented at: 225th American Chemical Society National Meeting, New Orleans, LA, March 23-27, 2003. 3/23/2003

**Contact:** Richard G. Zepp

Xie, H., Zafiriou, O.C., Cai, W.J., and Zepp, R.G. Effects of sunlight on carboxyl content of dissolved organic matter in the Satilla River of Georgia, United States. Presented at: 225th American Chemical Society National Meeting, New Orleans, LA, March 23-27, 2003. 3/23/2003

**Contact:** Richard G. Zepp

White, E.M., Vaughan, P.P., and Zepp, R.G. Photochemical production of hydroxyl radical in natural water - the role of iron and dissolved organic matter. Presented at: 225th American Chemical Society National Meeting, New Orleans, LA, March 23-27, 2003. 3/23/2003

**Contact:** Richard G. Zepp

Carousel, R.F., and Russo, R.C. Louisiana environmental modeling system for hypoxia related issues. Presented at: Seventh International Symposium on Fish Physiology, Toxicology and Water Quality, Tallinn, Estonia, May 12-15, 2003. 5/12/2003

**Contact:** Robert Carousel

Zepp, R.G. Interactions of climate change and UV radiation as corals stressors. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/7/2003

**Contact:** Richard G. Zepp

Kisselle, K., Zepp, R.G., Molina, M., Burke, Jr., R.A., and Franzluebbers, A.J. Effects of fertilizer type (chicken litter vs. inorganic fertilizer) and cattle grazing on the soil microbial community. Presented at: 2003 Annual Symposium: Soil Biodiversity and Function, Lancaster, UK, March 25-27, 2003. 3/25/2003

**Contact:** Richard G. Zepp

Russo, R.C., and Carousel, R.F. Louisiana environmental modeling system for hypoxia related issues. Presented at: Seventh International Symposium on Fish Physiology, Toxicology, and Water Quality, Tallinn, Estonia, May 12-15, 2003. 5/12/2003

**Contact:** Rosemarie C. Russo

Zepp, R.G. Shedding light on corals health: interactions of climate change and solar radiation with bleaching. Presented at: Corals Reefs, Climate, and Coral Bleaching Workshop, Oahu, HI, June 18-20, 2003. 6/18/2003

**Contact:** Richard G. Zepp

Zhang, Z.Z., and Bailey, G.W. Modeling of metal binding on humic substances using the NIST database: an a priori functional group approach. Presented at: Seventh International Symposium on Fish Physiology, Toxicology, and Water Quality, Tallinn, Estonia, May 12-15, 2003. 5/12/2003

**Contact:** George W. Bailey

Jones, W.J., O'Niell, W.L., Mazur, C.S., Kenneke, J.F., and Garrison, A.W. Enantioselective transformation of chiral PCBs and fipronil in anoxic sediments. Presented at: 23rd International Symposium on Halogenated Organic Pollutants and Persistent Organic Pollutants, Boston, MA, August 24-29, 2003. 8/26/2003

**Contact:** William Jack Jones

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2003 - Dec 31, 2003**

***Presented Published***

Hilal, S.H., Carreira, L.A., and Karickhoff, S.W. Estimation of physiochemical properties of organic compounds by SPARC. Presented at: 225th American Chemical Society National Meeting, New Orleans, LA, March 23-27, 2003. 3/23/2003

**Contact:** Said H. Hilal

Garrison, A.W., Jones, W.J., Wiese, T.E., Washington, J.W., Jarman, J.L., and Avants, J. Observations of enantioselectivity in the fate, persistence and effects of modern pesticides. Presented at: 23rd International Symposium on Halogenated Organic Pollutants and Persistent Organic Pollutants, Boston, MA, August 24-29, 2003. 8/25/2003

**Contact:** A. Wayne Garrison

Washington, J.W. Nutrients in watersheds: developing enhanced modeling tools. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** John Washington

Weber, E.J., Collette, T.W., Jones, W.J., Kenneke, J.F., Mazur, C.S., Suarez, L.A., Stevens, C.T., Washington, J.W., Wolfe, K., Wolfe, N.L., Bailey, G.W., and Parmar, R.S. Modeling chemical fate and metabolism for computational toxicology. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** Eric J. Weber

Washington, J.W., Burke, Jr., R.A., Ambrose, Jr., R.B., Hayter, E.J., Kraemer, S.R., Stevens, C.T., and Zepp, R.G. Nutrients in watersheds: developing enhanced modeling tools. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** John Washington

Weber, E.J., Parmar, R.S., Bailey, G.W., Collette, T.W., Hilal, S.H., Jones, W.J., Kenneke, J.F., Mazur, C.S., Suarez, L.A., Stevens, C.T., Washington, J.W., Wolfe, K., and Wolfe, N.L. Modeling chemical fate and metabolism for computational toxicology. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** Eric J. Weber

Ulrich, E.M., Wong, C.S., Rounds, S.A., VanMetre, P.C., Wilson, J.T., Garrison, A.W., and Foreman, W.T. Enantiomer fractions of chlordane compounds in sediment samples from U.S. Geological Survey sites in lakes, rivers, and reservoirs. Presented at: Dioxin '03, Boston, MA, August 24-29, 2003. 8/25/2003

**Contact:** A. Wayne Garrison

Ulrich, E.M., Wong, C.S., Rounds, S.A., VanMetre, P.C., Wilson, J.T., Garrison, A.W., and Foreman, W.T. Enantiomer fractions of chlordane compounds in sediment samples from U.S. Geological Survey sites in lakes, rivers and reservoirs. Presented at: 23rd International Symposium on Halogenated Organic Pollutants and Persistent Organic Pollutants, Boston, MA, August 24-29, 2003. 8/24/2003

**Contact:** A. Wayne Garrison

Garrison, A.W., Jones, W.J., Wiese, T.E., Washington, J.W., Jarman, J.L., and Avants, J. Observations of enantioselectivity in the fate, persistence and effects of modern pesticides. Presented at: 23rd International Symposium on Halogenated Organic Pollutants and Persistent Organic Pollutants, Boston, MA, August 24-29, 2003. 8/25/2003

**Contact:** A. Wayne Garrison

Burke, Jr., R.A., and Molinero, J. Trace gas concentrations in small streams of the Georgia Piedmont. Presented at: Georgia Water Resources Conference, Athens, GA, April 23-24, 2003. 4/23/2003

**Contact:** Roger A. Burke

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2003 - Dec 31, 2003**

***Presented Published***

Bird, S.L. Using canines in source detection of indoor air pollutants. Presented at: Indoor Air Quality Problems and Engineering Solutions Symposium, Research Triangle Park, NC, July 21-23, 2003. 7/21/2003

***Contact:*** Sandra L. Bird

Molinero, J., and Burke, Jr., R.A. Relations between land use and stream nutrient concentrations for small watersheds in the Georgia Piedmont. Presented at: Georgia Water Resources Conference, Athens, GA, April 23-24, 2003. 4/23/2003

***Contact:*** Roger A. Burke

Senter, J., Bird, S.L., and Rashleigh, B. Landscape-level indicators in small Georgia watersheds. Presented at: Georgia Water Resources Conference, Athens, GA, April 23-24, 2003. 4/23/2003

***Contact:*** Brenda Rashleigh

Rashleigh, B., and Kennen, J.G. Beyond the indices: relations of habitat and fish characteristics in the Georgia Piedmont. Presented at: Georgia Water Resources Conference, Athens, GA, April 23-24, 2003. 4/23/2003

***Contact:*** Brenda Rashleigh

Molinero, J., and Burke, Jr., R.A. Dissolved organic carbon (DOC) concentrations in small streams of the Georgia Piedmont. Presented at: North American Benthological Society Annual Meeting, Athens, GA, May 27-31, 2003. 5/27/2003

***Contact:*** Roger A. Burke

Rashleigh, B., and Randall, D.J. Modeling the response of fish populations to eutrophication. Presented at: Ecological Society of America Annual Meeting, Savannah, GA, August 3-8, 2003. 8/3/2003

***Contact:*** Brenda Rashleigh

Loux, N.T. DIFMOD2: A next generation diffuse layer model. Presented at: 39th International Union of Pure and Applied Chemistry Congress and 86th Conference of the Canadian Society for Chemistry, Ottawa, Canada, August 10-15, 2003. 8/10/2003

***Contact:*** Nicholas T. Loux

Bird, S.L. Drift of pesticides: developing an integrated exposure tool. Presented at: Seminar at OPPTS, Washington, DC, June 18-19, 2003. 6/18/2003

***Contact:*** Sandra L. Bird

Loux, N.T. Should latitudinal atmospheric trace vapor concentrations be reported on a mass density basis?. Presented at: Georgia Water Resources Conference, Athens, GA, April 23-24, 2003. 4/23/2003

***Contact:*** Nicholas T. Loux

Rashleigh, B., and Randall, D.J. Modeling the effects of eutrophication of fish populations. Presented at: Ecological Society of America Annual Meeting, Savannah, GA, August 3-8, 2003. 8/4/2003

***Contact:*** Brenda Rashleigh

Smith, C.N., Spidle, D.L., Smith, P.D., Kitchens, B.E., Cyterski, M.J., Prieto, L.M., Bouchard, D.C., Wolfe, K., Kollig, H.P., Smith, L., Senter, S., Flexner, M., Cavinder, T.R., and Johnson, B. A comprehensive nonpoint source field study for sediment, nutrients and pathogens in the South Fork Broad River watershed, Georgia. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Charles N. Smith

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2003 - Dec 31, 2003**

***Presented Published***

Burke, Jr., R.A. Trace gas concentrations in streams - early warning indicators of stream impairment?. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** Roger A. Burke

Johnston, J.M., Hoff, D., Hoogerheide, R., Edgar, R., Wall, D., and Ducheneaux, C. Mercury contamination of subsistence fisheries on Tribal lands: A partnership of ORD, Region 8 and Cheyenne River Sioux Reservation. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** John M. Johnston

Rashleigh, B. Stream fish habitat suitability and the risk of population decline. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** Brenda Rashleigh

Johnston, J.M., Hoff, D., Hoogerheide, R., Edgar, R., Wall, D., and Ducheneaux, C. Mercury risk management in livestock ponds on the Cheyenne River Sioux Reservation. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** John M. Johnston

Rashleigh, B. Population decline in stream fish. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** Brenda Rashleigh

Burke, Jr., R.A., and Molinero, J. Trace gas concentrations in streams - early warning indicators of stream impairment?. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** Roger A. Burke

Smith, C.N., Spidle, D.L., Stancil, F.E., Smith, P.D., Kitchens, B.E., Kollig, H.P., Smith, L., Senter, S., Cyterski, M.J., Prieto, L.M., Bouchard, D.C., Wolfe, K., Flexner, M., Cavinder, T.R., and Johnson, B. A comprehensive nonpoint source field study for sediment, nutrients and pathogens in the South Fork Broad River Watershed in Northeast Georgia. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

**Contact:** Charles N. Smith

Bird, S.L. Using canines in source detection of indoor air pollutants. Presented at: Indoor Air Quality Problems and Engineering Solutions Symposium, Research Triangle Park, NC, July 21-23, 2003. 7/22/2003

**Contact:** Sandra L. Bird

Loux, N.T. DIFMOD2PB: A next generation diffuse layer model. Presented at: 39th International Union of Pure and Applied Chemistry Congress and 86th Conference of the Canadian Society for Chemistry, Ottawa, Ontario, August 10-15, 2003. 8/12/2003

**Contact:** Nicholas T. Loux

Burke, Jr., R.A., and Molinero, J. Trace gas and nutrient concentrations in small streams of the Georgia Piedmont. Presented at: Invited Seminar at the Joseph W. Jones Ecological Research Center, Newton, GA, August 21, 2003. 8/21/2003

**Contact:** Roger A. Burke

Weaver, J.W. Software tools for assessment of contaminated sites. Presented at: U.S. EPA Office of Underground Storage Tanks Annual Conference, San Francisco, CA, March 10-12, 2003. 3/12/2003

**Contact:** James W. Weaver

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2003 - Dec 31, 2003**

***Presented Published***

Babendreier, J.E. National-scale multimedia risk assessment for hazardous waste disposal. Presented at: International Workshop on Uncertainty, Sensitivity, and Parameter Estimation for Multimedia Environmental Modeling, Rockville, MD, August 19-21, 2003. 8/19/2003

**Contact:** Justin E. Babendreier

Wang, Z., Hollebone, B., Fingas, M., Fieldhouse, B., Sigouin, L., Landriault, M., Noonan, J., and Weaver, J.W. Development of a composition database for selected multicomponent oils. Presented at: International Oil Spill Conference, Vancouver, Canada, April 7-10, 2003. 4/7/2003

**Contact:** James W. Weaver

Chandrasekar, S., Sorial, G.A., and Weaver, J.W. Determining dispersant effectiveness data for a suite of environmental conditions. Presented at: International Oil Spill Conference, Vancouver, Canada, April 7-10, 2003. 4/7/2003

**Contact:** James W. Weaver

Poeter, E., Babendreier, J.E., Hill, M., Doherty, J., and Banta, E.R. JUPITER Project - merging inverse problem formulation technologies. Presented at: International Workshop on Uncertainty, Sensitivity, and Parameter Estimation for Multimedia Environmental Modeling, Rockville, MD, August 19-21, 2003. 8/19/2003

**Contact:** Justin E. Babendreier

Weaver, J.W. EPA's on-line calculators and training course. Presented at: U.S. EPA Office of Underground Storage Tanks Annual Conference, San Francisco, CA, March 10-12, 2003. 3/12/2003

**Contact:** James W. Weaver

Castleton, K., Babendreier, J.E., Fine, S., Banta, E.R., Hill, M., Markstrom, S., and Leavesley, G. An overview of the uncertainty analysis, sensitivity analysis, and parameter estimation (UA/SA/PE) API and how to implement it. Presented at: International Workshop on Uncertainty, Sensitivity, and Parameter Estimation for Multimedia Environmental Modeling, Rockville, MD, August 19-21, 2003. 8/19/2003

**Contact:** Justin E. Babendreier

Laniak, G.F. Overview of 3MRA technical approach. Presented at: Science Advisory Board Review, Washington, DC, August 26, 2003. 8/26/2003

**Contact:** Gerard F. Laniak

Weaver, J.W. Risk assessment analyses using EPA's on-line site-specific transport models and field data. Presented at: 2003 Resource Conservation and Recovery Act National Meeting: Putting Resource Conservation into Resource Conservation and Recovery Act, Washington, DC, August 12-15, 2003. 8/12/2003

**Contact:** James W. Weaver

Plewa, M.J., Wagner, E.D., Kim, A.C., Nelson, R., and Richardson, S.D. Mammalian cell cytotoxicity and genotoxicity of new drinking water disinfection by-products. Presented at: 2003 Environmental Mutagen Society Conference, Miami, FL, May 10-14, 2003. 5/10/2003

**Contact:** Susan D. Richardson

Weaver, J.W., and Boufadel, M.C. Modeling dispersant interactions with oil spills. Presented at: 225th American Chemical Society National Meeting, New Orleans, LA, March 23-27, 2003. 3/23/2003

**Contact:** James W. Weaver

Weaver, J.W. Models as a component of decision-making at Brownfield sites. Presented at: RevTech Conference, Pittsburgh, PA, July 22-24, 2003. 7/22/2003

**Contact:** James W. Weaver

# ***NERL/ERD Publications***

***Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)***

**Jan 1, 2003 - Dec 31, 2003**

***Presented Published***

Thruston, Jr., A.D., Richardson, S.D., Couillard, L.A., Lewis, C., and Klappa, P. GC/MS identification of drinking water disinfection by-products from Milwaukee's new ozonation plants. Presented at: 51st American Society for Mass Spectrometry Conference, Montreal, Canada, June 8-12, 2003. 6/8/2003

***Contact:*** Alfred D. Thruston

Richardson, S.D., Thruston, Jr., A.D., Krasner, S.W., Weinberg, H.S., Chinn, R., Scilimenti, M.J., Pastor, S., and Onstad, G.D. Disinfection by-products of health concern in drinking water: results of a nationwide occurrence study. Presented at: 51st American Society for Mass Spectrometry Conference, Montreal, Canada, June 8-12, 2003. 6/8/2003

***Contact:*** Susan D. Richardson

Babendreier, J.E., Parmar, R.S., Wolfe, K., Uter, S., and McKendrick, M. PC-based supercomputing for uncertainty and sensitivity analysis of models. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Justin E. Babendreier

Weaver, J.W., Haas, J.E., and Small, M.C. Using subsurface transport research to achieve agency outcomes. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** James W. Weaver

Kraemer, S.R. Preventing contamination of public water supply wells using computerized modeling and mapping tools. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Stephen R. Kraemer

Laniak, G.F. Integrating the science and technology of environmental assessment across Federal Agencies. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Gerard F. Laniak

Richardson, S.D. Disinfection by-products of health concern in drinking water: results of a nationwide occurrence study. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Susan D. Richardson

Frick, W.E. Predicting bacterial concentration on the nation's beaches. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Walter E. Frick

Hayter, E.J. Development of modeling protocols for use in determining sediment TMDLs. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Earl Hayter

Laniak, G.F. Integrating the science and technology of environmental assessment across Federal Agencies. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Gerard F. Laniak

Richardson, S.D., Thruston, Jr., A.D., Krasner, S.W., Weinberg, H.S., Chinn, R., Scilimenti, M.J., Pastor, S.J., and Onstad, G.D. Emerging disinfection by-products of toxicological interest: results of a nationwide occurrence study. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Susan D. Richardson

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2003 - Dec 31, 2003**

***Presented Published***

Babendreier, J.E., Parmar, R.S., Wolfe, K., Uter, S., and McKendrick, M. PC-based supercomputing for uncertainty and sensitivity analysis of models. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Justin E. Babendreier

Hayter, E.J. Development of modeling protocols for use in determining sediment TMDLs. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Earl Hayter

Weaver, J.W., Haas, J.E., and Small, M.C. Using subsurface transport research to achieve agency outcomes. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** James W. Weaver

Kraemer, S.R. Preventing contamination of public water supply wells using computerized modeling and mapping tools. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Stephen R. Kraemer

Frick, W.E., and Molina, M. Predicting bacterial concentration on the Nation's beaches. Presented at: Science Forum 2003, Washington, DC, May 5-7, 2003. 5/5/2003

***Contact:*** Walter E. Frick

Richardson, S.D. Do you know what's in your drinking water? Identifying the chemical by-products you can't see. Presented at: Northeast Georgia Engineers Meeting, Athens, GA, June 20, 2003. 6/20/2003

***Contact:*** Susan D. Richardson

Weaver, J.W. LUST On-line calculator introduction. Presented at: RevTech Conference, Pittsburg, PA, July 22--24, 2003. 7/24/2003

***Contact:*** James W. Weaver

Weaver, J.W. LUST On-line calculator introduction. Presented at: RevTech Conference, Pittsburg, PA, July 22-24, 2003. 7/24/2003

***Contact:*** James W. Weaver

Weaver, J.W. Models as a component of decision-making at Brownfields sites. Presented at: RevTech Conference, Pittsburg, PA, July 22-24, 2003. 7/22/2003

***Contact:*** James W. Weaver

Richardson, S.D., Thruston, Jr., A.D., Krasner, S.W., Weinberg, H.S., Chinn, R., Scilimenti, M.J., Pastor, S.J., and Onstad, G.D. Disinfection by-products of health concern in drinking water: results of a nationwide occurrence study. Presented at: 51st American Society for Mass Spectrometry Conference, Montreal, Canada, June 8-12, 2003. 6/8/2003

***Contact:*** Susan D. Richardson

Thruston, Jr., A.D., Richardson, S.D., Couillard, L.A., Lewis, C., and Klappa, P. GC/MS identification of drinking water disinfection by-products from Milwaukee's new ozonation plants. Presented at: 51st American Society for Mass Spectrometry Conference, Montreal, Canada, June 8-12, 2003. 6/8/2003

***Contact:*** Alfred D. Thruston



# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2003 - Dec 31, 2003**

***Presented Published***

Laniak, G.F. The related role of environmental modeling frameworks. Presented at: International Workshop on Uncertainty, Sensitivity, and Parameter Estimation for Multimedia Environmental Modeling, Rockville, MD, August 19-21, 2003. 8/19/2003

***Contact:*** Gerard F. Laniak

Babendreier, J.E. Uncertainty and sensitivity analyses for integrated human health and ecological risk assessment of hazardous waste disposal. Presented at: 2003 Resource Conservation and Recovery Act National Meeting: Putting Resource Conservation into Resource Conservation and Recovery Act, Washington, DC, August 12-15, 2003. 8/13/2003

***Contact:*** Justin E. Babendreier

Weaver, J.W. Risk assessment analyses using EPA's on-line site-specific transport models and field data. Presented at: 2003 Resource Conservation and Recovery Act National Meeting: Putting Resource Conservation into Resource Conservation and Recovery Act, Washington, DC, August 12-15, 2003. 8/13/2003

***Contact:*** James W. Weaver

Laniak, G.F. The related role of environmental modeling systems. Presented at: International Workshop on Uncertainty, Sensitivity, and Parameter Estimation for Multimedia Environmental Modeling, Rockville, MD, August 19-21, 2003. 8/21/2003

***Contact:*** Gerard F. Laniak

Babendreier, J.E. Uncertainty and sensitivity analyses for integrated human health and ecological risk assessment of hazardous waste disposal. Presented at: 2003 Resource Conservation and Recovery Act National Meeting: Putting Resource Conservation into Resource Conservation and Recovery Act, Washington, DC, August 12-15, 2003. 8/14/2003

***Contact:*** Justin E. Babendreier

Uncertainty, sensitivity, and parameter estimation in risk assessment modeling. Presented at: International Workshop on Uncertainty, Sensitivity, and Parameter Estimation for Multimedia Environmental Modeling, Rockville, MD, August 19-21, 2003. 8/19/2003

***Contact:*** Justin E. Babendreier

Laniak, G.F. 3MRA Quality Assurance. Presented at: Science Advisory Board Review, Washington, DC, August 26, 2003. 8/21/2003

***Contact:*** Gerard F. Laniak

## ***JOURNAL***

Bouchard, D.C. Cosolvent effects on phenanthrene sorption-desorption on a fresh-water sediment. Environmental Toxicology and Chemistry 22 (4):736-740 (2003). EPA/600/J-03/328. 4/1/2003

***Contact:*** Dermont C. Bouchard

Kenneke, J.F., and Weber, E.J. Reductive dehalogenation of halomethanes in iron- and sulfate-reducing sediments. 1. Reactivity pattern analysis. Environmental Science & Technology 37 (4):713-720 (2003). EPA/600/J-03/150. 2/15/2003

***Contact:*** Eric J. Weber

Collette, T.W., Williams, T.L., Urbansky, E.T., Magnuson, M.L., Hebert, G.N., and Strauss, S.H. Analysis of hydroponic fertilizer matrixes for perchlorate: comparison of analytical techniques. Analyst 128 (1):88-97 (2003). EPA/600/J-02/431. 1/15/2003

***Contact:*** Timothy W. Collette



# ***NERL/ERD Publications***

***Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)***

**Jan 1, 2003 - Dec 31, 2003**

***Presented Published***

Pakdeesusuk, U., Jones, W.J., Lee, C.M., Garrison, A.W., O'Niell, W.L., Freedman, D.L., Coates, J.T., and Wong, C.S. Changes in enantiomeric fractions during microbial reductive dechlorination of PCB132, PCB149, and Aroclor 1254 in Lake Hartwell sediment microcosms. *Environmental Science & Technology* 37 (6):1100-1107 (2003). EPA/600/J-03/327. 3/15/2003

***Contact:*** William Jack Jones

Hilal, S.H., Karickhoff, S.W., and Carreira, L.A. Prediction of the vapor pressure, boiling point, heat of vaporization and diffusion coefficient of organic compounds. *QSAR & Combinatorial Science* 22 (6):565-574 (2003). 8/8/2003

***Contact:*** Said H. Hilal

Sundberg, S.E., Ellington, J.J., Evans, J.J., Keys, D., and Fisher, J.W. Accumulation of perchlorate in tobacco plants: development of a plant kinetic model. *Journal of Environmental Monitoring* 5 (3):505-512 (2003). EPA/600/J-03/326. 5/12/2003

***Contact:*** J. Jackson Ellington

Burke, Jr., R.A., Molina, M., Cox, J.E., Osher, L.J., and Piccolo, M.C. Stable carbon isotope ratio and composition of microbial fatty acids in tropical soils. *Journal of Environmental Quality* 32 (1):198-206 (2003). EPA/600/J-03/067. 1/3/2003

***Contact:*** Roger A. Burke

Doherty, J., and Johnston, J.M. Methodologies for calibration and predictive analysis of a watershed model. *Journal of the American Water Resources Association* 39 (2):251-265 (2003). EPA/600/J-03/325. 4/15/2003

***Contact:*** John M. Johnston

Bird, S.L. Book review of "Ecological Effects of Roads". *Journal of Environmental Quality* 32 (3):1151 (2003). EPA/600/J-03/366. 6/2/2003

***Contact:*** Sandra L. Bird

Loux, N.T. An exact method for relating zwitterionic microscopic to macroscopic acidity constants. *Chemical Speciation and Bioavailability* 15 (2):47-51 (2003). 600/J-03/380. 7/15/2003

***Contact:*** Nicholas T. Loux

Richardson, S.D. Water analysis: emerging contaminants and current issues. *Analytical Chemistry* 75 (12):2831-2857 (2003). EPA/600/J-03/367. 6/15/2003

***Contact:*** Susan D. Richardson

## ***RESEARCH RPT***

Hilal, S.H. Prediction of chemical reactivity parameters and physical properties of organic compounds from molecular structure using SPARC. 2003. EPA/600/R-03/030. 3/19/2003

***Contact:*** Said H. Hilal

Hilal, S.H. Verification and validation of the SPARC model. 2003. EPA/600/R-03/033. 1/16/2003

***Contact:*** Said H. Hilal

## ***SYMPOS/CONF***

Frick, W.E. Diverse models for solving contrasting outfall problems. Presented at: 4th International Exhibition and Conference on Environmental Technology, Athens, Greece, January 30-February 4, 2003. EPA/600/A-03/023. 1/30/2003

***Contact:*** Walter E. Frick



# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2002 - Dec 31, 2002**

***Presented Published***

## ***ABSTRACT/ORAL***

Zepp, R.G., Moran, M.A., White, E., and Stabenau, E. Photochemical and biological degradation of CDOM in waters from selected coastal regions of the Southeastern United States. Presented at: 2002 Ocean Sciences Meeting, Honolulu, HI, February 11-15, 2002. 2/11/2002

***Contact:*** Richard G. Zepp

Zepp, R.G. Solar UV radiation and aquatic biogeochemistry. Presented at: Ozone Depletion over the Southern Ocean Workshop, Dunedin, New Zealand, February 22, 2002. 2/22/2002

***Contact:*** Richard G. Zepp

Kisselle, K., Zepp, R.G., Burke, Jr., R.A., Pinto, A., and Bustamante, M. NO<sub>x</sub> and CO emissions from soil and surface litter in a Brazilian savanna. Presented at: 2nd Science Meeting for the Large Atmosphere and Biosphere in Amazonia (LBA), Manaus, Brazil, July 7-10, 2002. 7/7/2002

***Contact:*** Richard G. Zepp

O'Niell, W.L., Jones, W.J., Whittemore, A., and Avants, J. Enantioselective reductive transformation of chiral polychlorinated biphenyls in lake sediment microcosms. Presented at: Third International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 20-23, 2002. 5/20/2002

***Contact:*** William Jack Jones

Ekman, D.R., Lorenz, W.W., McCutcheon, S.C., and Wolfe, N.L. Use of serial analysis of gene expression (SAGE) to study genetic responses to the presence of the TNT or RDX by *Arabidopsis thaliana*. Presented at: Sixth International Symposium on Environmental Biotechnology and Fourth International Symposium on Cleaner Bioprocesses and Sustainable Development, Vera Cruz, Mexico, June 9-12, 2002. 6/9/2002

***Contact:*** N. Lee Wolfe

Sawunyama, P., and Bailey, G.W. Structures and binding energies of methyl tert-butyl ether-water complexes. Presented at: 223rd American Chemical Society National Meeting, Orlando, FL, April 7-11, 2002. 4/7/2002

***Contact:*** George W. Bailey

Hoehamer, C.F., Mazur, C.S., and Wolfe, N.L. Isolation and partial characterization of an acid phosphatase activity from *Spirodela oligorhiza*. Presented at: Sixth International Symposium on Environmental Biotechnology and Fourth International Symposium on Cleaner Bioprocesses and Sustainable Development, Vera Cruz, Mexico, June 9-12, 2002. 6/9/2002

***Contact:*** N. Lee Wolfe

Sealock, G.A., and Wolfe, N.L. Uptake and transformation of explosives by eastern cottonwood (*populus deltoides*). Presented at: Sixth International Symposium on Environmental Biotechnology and Fourth International Symposium on Cleaner Bioprocesses and Sustainable Development, Vera Cruz, Mexico, June 9-12, 2002. 6/9/2002

***Contact:*** N. Lee Wolfe

Bouchard, D.C. Using methanol-water systems to investigate phenanthrene sorption-desorption on sediment. Presented at: 223rd American Chemical Society National Meeting, Orlando, FL, April 7-11, 2002. 4/7/2002

***Contact:*** Dermont C. Bouchard

Garrison, A.W., Jones, W.J., and Avants, J. Use of capillary electrophoresis to measure the enantioselective transformations of chiral environmental pollutants. Presented at: EnviroAnalysis 2002, Toronto, Canada, May 27-31, 2002. 5/27/2002

***Contact:*** A. Wayne Garrison

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2002 - Dec 31, 2002**

***Presented   Published***

Bailey, G.W., and Sawunyama, P. Biosurfaces and bioavailability: a nanoscale overview. Presented at: Bouyoucos Conference on Molecular Level Processes Controlling Availability of Chemical Species to Plants and Animals, Chalkidiki, Greece, June 23-28, 2002. 6/23/2002

***Contact:*** George W. Bailey

O'Niell, W.L., Jones, W.J., Whittemore, A., and Avants, J. Determination of transformation rates of chiral pesticides and PCBs in soil and sediment microcosms. Presented at: 8th Federation of the European Chemical Societies Conference on Chemistry and the Environment: Chemistry for a Sustaining World, Athens, Greece, September 1-4, 2002. 9/1/2002

***Contact:*** William Jack Jones

Pakdeesusuk, U., Lee, C.M., Freedman, D.L., Coates, J.T., Wong, C.S., Jones, W.J., and Garrison, A.W. Enantioselectivity in the biodegradation of PCB atropisomers. Presented at: 23rd Annual Society of Environmental Toxicology and Chemistry Meeting, Salt Lake City, UT, November 16-20, 2002. 11/16/2002

***Contact:*** William Jack Jones

Sawunyama, P., and Bailey, G.W. Methyl tert-butylether-water interaction. Presented at: American Society of Agronomy-Crop Science Society of America-Soil Science Society of America Annual Meeting, Indianapolis, IN, November 10-14, 2002. 11/11/2002

***Contact:*** George W. Bailey

Collette, T.W., and Williams, T.L. Speciation of organics in water with Raman spectroscopy: utility of ionic strength variation. Presented at: Federation of Analytical Chemistry and Spectroscopy Societies Conference, Providence, RI, October 13-17, 2002. 10/13/2002

***Contact:*** Timothy W. Collette

Bouchard, D.C. Atrazine desorption kinetics from a fresh-water sediment. Presented at: 54th Southeast Regional Meeting of the American Chemical Society, Charleston, SC, November 13-16, 2002. 11/13/2002

***Contact:*** Dermont C. Bouchard

Lehmlier, H.J., Price, D.J., Garrison, A.W., and Robertson, L.W. Distribution of PCB 84 enantiomers in C56BL/6 mice. Presented at: 2nd PCB Workshop: "Recent Advances in the Environmental Toxicology and Health Effects of PCBs", Brno, Czech Republic, May 7-11, 2002. 5/7/2002

***Contact:*** A. Wayne Garrison

Ulrich, E.M., Wong, C.S., Rounds, S.A., Van Metre, P.C., Wilson, J.T., Garrison, A.W., and Foreman, W.T. Chiral chlordane signatures in USGS National Water-Quality Assessment Program sediment samples. Presented at: 23rd Annual Society of Environmental Toxicology and Chemistry Meeting, Salt Lake City, UT, November 16-20, 2002. 11/16/2002

***Contact:*** A. Wayne Garrison

Lee, C.M., Pakdeesusuk, U., Freedman, D.L., Coates, J.T., Garrison, A.W., and Elzerman, A.W. PCBs in Lake Hartwell, SC, headwaters of the Savannah River basin. Presented at: 54th Southeast Regional Meeting of the American Chemical Society, Charleston, SC, November 13-16, 2002. 11/13/2002

***Contact:*** A. Wayne Garrison

Sundberg, S.E., Fisher, J.W., Ellington, J.J., Evans, J.J., and Keys, D. A simple model for the uptake, translocation, and accumulation of perchlorate in tobacco plants. Presented at: Annual Meeting Southeastern Regional Chapter of the Society of Toxicology, Athens, GA, October 31-November 1, 2002. 10/31/2002

***Contact:*** J. Jackson Ellington

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2002 - Dec 31, 2002**

***Presented Published***

Sundberg, S.E., Ellington, J.J., Evans, J.J., and Fisher, J.W. Phytoremediation of perchlorate by tobacco plants. Presented at: Annual Meeting Southeastern Regional Chapter of the Society of Toxicology, Athens, GA, October 31-November 1, 2002. 10/31/2002

**Contact:** J. Jackson Ellington

Loux, N.T., and Washington, J.W. Errors in applying low ionic-strength activity coefficient algorithms to higher ionic-strength aquatic media. Presented at: 223rd American Chemical Society National Meeting, Orlando, FL, April 7-11, 2002. 4/7/2002

**Contact:** Nicholas T. Loux

Molinero, J., and Burke, Jr., R.A. Assessing non-point sources of nitrogen to small streams in the South Fork Broad River watershed (Georgia, USA). Presented at: VII International Congress of Ecology, Seoul, Korea, August 11-18, 2002. 8/11/2002

**Contact:** Roger A. Burke

Loux, N.T., Collette, T.W., and Washington, J.W. An alternative method for relating macroscopic to microscopic acidity constants with zwitterionic species. Presented at: 223rd American Chemical Society National Meeting, Orlando, FL, April 7-11, 2002. 4/7/2002

**Contact:** Nicholas T. Loux

Bird, S.L., Harrison, J., and Exum, L.R. Screening to identify and prevent urban storm water problems: estimating impervious area accurately and cheaply. Presented at: National Water Quality Monitoring Conference, Madison, WI, May 20-23, 2002. 5/20/2002

**Contact:** Sandra L. Bird

Viana, L., Pinto, A., Bustamante, M., Molina, M., Zepp, R.G., and Kisselle, K. Structure of microbial communities in native and converted savanna areas of central Brazil. Presented at: American Society for Microbiology Annual Meeting, Salt Lake City, UT, May 19-23, 2002. 5/19/2002

**Contact:** Marirosa Molina

Burke, Jr., R.A., and Molina, M. Use of fatty acid stable carbon isotope ratio to indicate microbial carbon source in tropical soils. Presented at: 3rd Annual International Conference on Application of Stable Isotope Techniques to Ecological Studies, Flagstaff, AZ, April 28-May 1, 2002. 4/28/2002

**Contact:** Roger A. Burke

Molina, M., and Burke, Jr., R.A. <sup>13</sup>C-depleted microbial lipids indicate seasonal methanotrophic activity in shallow estuarine sediments. Presented at: American Society of Limnology and Oceanography Conference, Victoria, Canada, June 10-14, 2002. 6/10/2002

**Contact:** Marirosa Molina

Rashleigh, B. Projecting the response of fish population growth rate to sediment exposure. Presented at: Georgia American Fisheries Society Meeting, Augusta, GA, January 29-31, 2002. 1/29/2002

**Contact:** Brenda Rashleigh

Rashleigh, B. Ecological endpoint modeling: effects of sediment on fish populations. Presented at: National Total Maximum Daily Loads Science and Policy Conference, Phoenix, AZ, November 13-16, 2002. 11/13/2002

**Contact:** Brenda Rashleigh

Cyterski, M.J., and Ney, J. Trophic dynamics of striped bass in Smith Mountain Lake, Virginia. Presented at: American Fisheries Society Annual Meeting, Baltimore, MD, August 18-22, 2002. 8/18/2002

**Contact:** Mike Cyterski

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2002 - Dec 31, 2002**

***Presented Published***

Rashleigh, B., and Randall, D.J. Modeling the response of fish populations to eutrophication. Presented at: North Atlantic Treaty Organization/Committee on the Challenges of Modern Society Workshop, Ljubljana, Slovenia, May 6-12, 2002. 5/6/2002

***Contact:*** Brenda Rashleigh

Burke, Jr., R.A., and Molinero, J. Nitrous oxide concentrations in small streams of the Georgia Piedmont. Presented at: American Society of Agronomy-Crop Science Society of America-Soil Science Society of America Annual Meeting, Indianapolis, IN, November 10-14, 2002. 11/10/2002

***Contact:*** Roger A. Burke

Molina, M. Microbial community diversity and carbon utilization in estuarine ecosystems of Southeastern U.S.A.. Presented at: Invited Speaker, University of Puerto Rico, Humacao, Puerto Rico, September 21, 2002. 9/21/2002

***Contact:*** Marirosa Molina

Richardson, S.D. Career opportunities at the U.S. EPA. Presented at: 223rd American Chemical Society National Meeting, Orlando, FL, April 7-11, 2002. 4/7/2002

***Contact:*** Susan D. Richardson

Babendreier, J.E., and Castleton, K.J. Investigating uncertainty and sensitivity in integrated multimedia environmental models: tools for 3MRA. Presented at: International Environmental Modelling and Software Society 2002 Biennial Meeting, Lugano, Switzerland, June 24-27, 2002. 6/25/2002

***Contact:*** Justin E. Babendreier

Richardson, S.D., Thruston, Jr., A.D., Krasner, S.W., and Weinberg, H.S. Results of the nationwide DBP occurrence study: identification of new and interesting DBPs. Presented at: International Society of Exposure Analysis - International Society of Environmental Epidemiology Conference, Vancouver, Canada, August 11-15, 2002. 8/11/2002

***Contact:*** Susan D. Richardson

Weaver, J.W., and Tebes-Stevens, C.L. Uncertainty in model predictions-plausible outcomes from estimates of input ranges. Presented at: Brownfields 2002, Charlotte, NC, November 13-15, 2002. 11/13/2002

***Contact:*** James W. Weaver

Frick, W.E., and Barber, M.C. Compressible flow, entrainment, and megaplume. Presented at: 2002 Ocean Sciences Meeting, Honolulu, HI, February 11-15, 2002. 2/11/2002

***Contact:*** Walter E. Frick

Richardson, S.D., Thruston, Jr., A.D., McKague, B., Rav-Acha, C., and Glezer, V. Identification of new brominated acids in drinking water. Presented at: 50th American Society for Mass Spectrometry Conference, Orlando, FL, June 2-6, 2002. 6/2/2002

***Contact:*** Susan D. Richardson

Vincenti, M., Davit, P., and Richardson, S.D. Comparison of perfluorinated chloroformates as direct aqueous sample derivatizing agents for highly hydrophilic analytes. Presented at: 50th American Society for Mass Spectrometry Conference, Orlando, FL, June 2-6, 2002. 6/2/2002

***Contact:*** Susan D. Richardson

Babendreier, J.E. The relative importance of the vadose zone in multimedia risk assessment modeling applied at a national scale: an analysis of benzene using 3MRA. Presented at: 2002 American Geophysical Union Spring Meeting, Washington, DC, May 28-31, 2002. 5/28/2002

***Contact:*** Justin E. Babendreier

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2002 - Dec 31, 2002**

***Presented Published***

Hayter, E.J. Modeling framework for evaluating sedimentation in stream networks: for use in sediment TMDL analysis. Presented at: National TMDL Science and Policy Conference, Phoenix, AZ, November 13-16, 2002. 11/13/2002

***Contact:*** Earl Hayter

Kraemer, S.R. Subsurface residence times as an algorithm for aquifer sensitivity mapping: testing the concept with analytic element ground water models in the Contentnea Creek basin, North Carolina, USA. Presented at: 2002 American Geophysical Union Spring Meeting, Washington, DC, May 28-31, 2002. 5/28/2002

***Contact:*** Stephen R. Kraemer

Weaver, J.W., Boufadel, M.C., and Naba, B. Transport studies in the Lock Lake tidal marsh of southern Long Island. Presented at: 2002 American Geophysical Union Spring Meeting, Washington, DC, May 28-31, 2002. 5/28/2002

***Contact:*** James W. Weaver

Laniak, G.F. Software system design and implementation for environmental modeling: a MOU working group. Presented at: Interagency Conference on Hydrology, Las Vegas, NV, July 28-August 1, 2002. 7/28/2002

***Contact:*** Gerard F. Laniak

Frick, W.E., Baumgartner, D.J., Denton, D.L., and Roberts, P.J.W. New developments of Visual Plumes - evaluation of bacterial pollution. Presented at: 2nd International Conference on Marine Waste Water Discharges, Istanbul, Turkey, September 16-20, 2002. 9/16/2002

***Contact:*** Walter E. Frick

Kraemer, S.R. Analytic element modeling for source water assessments of public water supply wells: case studies in glacial outwash and basin-and-range. Presented at: Geological Society of America Annual Meeting, Denver, CO, October 27-30, 2002. 10/28/2002

***Contact:*** Stephen R. Kraemer

Frick, W.E. Low-velocity compressible flow theory. Presented at: Seminar at University of Hong Kong, Kowloon, Hong Kong, December 12, 2002. 12/12/2002

***Contact:*** Walter E. Frick

Frick, W.E. Visual plumes concepts to potentially adapt or adopt in modeling platforms such as VISJET. Presented at: Seminar at University of Hong Kong, Kowloon, Hong Kong, December 10, 2002. 12/10/2002

***Contact:*** Walter E. Frick

## ***BOOK CHAPTR***

Zepp, R.G. "Solar ultraviolet radiation and aquatic carbon, nitrogen, sulfur and metals cycles." In: UV Effects in Aquatic Organisms and Ecosystems, Chapter 5 E.W. Helbling and H. Zagarese (Ed.), Cambridge, UK: Royal Society of Chemistry 2002, 137-183. EPA/600/A-03/019. 11/1/2002

***Contact:*** Richard G. Zepp

Loux, N.T. "Effective acidity-constant behavior near zero-charge conditions." In: Interfacial applications in environmental engineering, Chapter 11 Keane, M.A. (Ed.), New York, NY: Marcel Dekker, Inc. 2002, 193-214. 12/15/2002

***Contact:*** Nicholas T. Loux



# ***NERL/ERD Publications***

***Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)***

**Jan 1, 2002 - Dec 31, 2002**

***Presented Published***

## ***JOURNAL***

- Pinto, A., Bustamante, M., Viana, L., Varella, R., Zepp, R.G., Burke, Jr., R.A., Molina, M., and Kisselle, K. Soil emissions of N<sub>2</sub>O, NO and CO<sub>2</sub> in Brazilian savannas: Effects of vegetation type, seasonality, and prescribed fires. *Journal of Geophysical Research* 107 (D20):8089-8089 (2002). EPA/600/J-03/330. **10/15/2002**  
**Contact:** Richard G. Zepp
- Kisselle, K., Zepp, R.G., Burke, Jr., R.A., Opsahl, S.P., Pinto, A., Bustamante, M., Viana, L., and Varella, R. Seasonal soil fluxes of carbon monoxide in burned and unburned Brazilian savannas. *Journal of Geophysical Research* 107 (D20):8051-8051 (2002). EPA/600/J-03/329. **10/15/2002**  
**Contact:** Richard G. Zepp
- Russo, R.C. Development of marine water quality criteria. *Marine Pollution Bulletin* 45 (1-12):84-91 (2002). EPA/600/J-03/075. **9/1/2002**  
**Contact:** Rosemarie C. Russo
- Miller, W.L., Moran, M.A., Sheldon, W., Zepp, R.G., and Opsahl, S.P. Determination of apparent quantum yield spectra for the formation of biologically labile photoproducts. *Limnology and Oceanography* 47 (2):343-352 (2002). EPA/600/J-02/137. **3/1/2002**  
**Contact:** Richard G. Zepp
- Hu, C., Muller-Karger, F.E., and Zepp, R.G. Absorbance, absorption coefficient, and apparent quantum yield: a comment on ambiguity in the use of these optical concepts. *Limnology and Oceanography* 47 (4):1261-1267 (2002). EPA/600/J-03/152. **4/15/2002**  
**Contact:** Richard G. Zepp
- Sawunyama, P., and Bailey, G.W. A computational chemistry study of the environmentally important acid-catalyzed hydrolysis of atrazine and related 2-chloro-s-triazines. *Pest Management Science* 58 (8):759-768 (2002). EPA/600/J-03/074. **6/15/2002**  
**Contact:** George W. Bailey
- Bouchard, D.C. Cosolvent effects on sorption isotherm linearity. *Journal of Contaminant Hydrology* 56 (3-4):159-174 (2002). EPA/600/J-03/068. **6/1/2002**  
**Contact:** Dermont C. Bouchard
- Collette, T.W., and Williams, T.L. The role of Raman spectroscopy in the analytical chemistry of potable water. *Journal of Environmental Monitoring* 4 (1):27-34 (2002). EPA/600/J-02/135. **1/15/2002**  
**Contact:** Timothy W. Collette
- Colon, D., Weber, E.J., and Baughman, G.L. Sediment-associated reactions of aromatic amines. 2. QSAR development. *Environmental Science & Technology* 36 (11):2443-2450 (2002). EPA/600/J-03/072. **6/1/2002**  
**Contact:** Eric J. Weber
- Medina, V.F., Larson, S.L., and McCutcheon, S.C. Evaluation of continuous flow-through phytoreactors for the treatment of TNT-contaminated water. *Environmental Progress* 21 (1):29-36 (2002). EPA/600/J-03/071. **4/1/2002**  
**Contact:** Steve C. McCutcheon
- Susarla, S., Medina, V.F., and McCutcheon, S.C. Phytoremediation: An ecological solution to organic chemical contamination. *Ecological Engineering* 18 (5):647-658 (2002). EPA/600/J-03/073. **6/15/2002**  
**Contact:** Steve C. McCutcheon

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2002 - Dec 31, 2002**

***Presented Published***

- Teske, M.E., Bird, S.L., Esterly, D.M., Curbishley, T.B., Ray, S.L., and Perry, S.G. AgDRIFT: a model for estimating near-field spray drift from aerial applications. *Environmental Toxicology and Chemistry* 21 (3):659-671 (2002). EPA/600/J-02/139. 3/1/2002  
**Contact:** Sandra L. Bird
- Bird, S.L., Perry, S.G., Ray, S.L., and Teske, M.E. Evaluation of the AgDISP aerial spray algorithms in the AgDRIFT model. *Environmental Toxicology and Chemistry* 21 (3):672-681 (2002). EPA/600/J-02/138. 3/1/2002  
**Contact:** Sandra L. Bird
- Lewis, D.L., Gattie, D.K., Novak, M.E., Sanchez, S., and Phumphrey, C. Interactions of pathogens and irritant chemicals in land-applied sewage sludges (biosolids). *BMC Public Health* 2 (1):11 (2002). EPA/600/J-03/062, <http://www.biomedcentral.com/1471-2458/2/11>. 6/28/2002  
**Contact:** David L. Lewis
- Johnston, J.M., and Crossley, Jr., D.A. Forest ecosystem recovery in the southeast US: soil ecology as an essential component of ecosystem management. *Forest Ecology and Management* 155 (1-3):187-203 (2002). EPA/600/J-02/134. 1/1/2002  
**Contact:** John M. Johnston
- Bird, S.L., Alberty, S.W., and Exum, L.R. Generating high quality impervious cover data. *Quality Assurance* 8 (2):91-103 (2000). EPA/600/J-02/133. 1/5/2002  
**Contact:** Sandra L. Bird
- Lewis, D.L., and Gattie, D.K. Pathogen risks from applying sewage sludge to land. *Environmental Science & Technology* 36 (13):286A-293A (2002). EPA/600/J-03/151. 7/1/2002  
**Contact:** David L. Lewis
- Simmons, J.E., Richardson, S.D., Speth, T.F., Miltner, R.J., Rice, G., Schenck, K.M., Hunter, E.S. III, and Teuschler, L.K. Development of a research strategy for integrated technology-based toxicological and chemical evaluation of complex mixtures of drinking water disinfection byproducts. *Environmental Health Perspectives* 110 (Supplement 6):1013-1024 (2002). EPA/600/J-03/066. 12/15/2002  
**Contact:** Susan D. Richardson
- Monarca, S., Richardson, S.D., Feretti, D., Grottolo, M., Thruston, Jr., A.D., Zani, C., Navazio, G., Ragazzo, P., Zerbin, I., and Alberti, A. Mutagenicity and disinfection by-products in surface drinking water disinfected with peracetic acid. *Environmental Toxicology and Chemistry* 21 (2):309-318 (2002). EPA/600/J-02/136. 2/1/2002  
**Contact:** Susan D. Richardson
- Richardson, S.D. The role of GC-MS and LC-MS in the discovery of drinking water disinfection by-products. *Journal of Environmental Monitoring* 4 (1):1-9 (2002). EPA/600/J-02/132. 1/28/2002  
**Contact:** Susan D. Richardson
- Richardson, S.D., Simmons, J.E., and Rice, G. Disinfection Byproducts: the next generation. *Environmental Science & Technology* 36 (9):198A-205A (2002). EPA/600/J-03/365. 5/1/2002  
**Contact:** Susan D. Richardson

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2002 - Dec 31, 2002**

***Presented Published***

Arbuckle, T.E., Hrudey, S.E., Krasner, S.W., Nuckols, J.R., Richardson, S.D., Singer, P.C., Mendola, P., Dodds, L., Weisel, C.E., Ashley, D.L., Froese, K.L., Pegram, R.A., Schultz, I.R., Reif, J., Bachand, A.M., Benoit, F.M., Lynberg, M.C., Poole, C., and Waller, K. Assessing exposure in epidemiologic studies to disinfection by-products in drinking water: report from an international workshop. *Environmental Health Perspectives* 110 (1):53-60 (2002). EPA/600/J-03/149. 2/2/2002

***Contact:*** Susan D. Richardson

Hussein, M., Jin, M., and Weaver, J.W. Development and verification of a screening model for surface spreading of petroleum. *Journal of Contaminant Hydrology* 57 (3-4):281-302 (2002). EPA/600/J-03/069. 8/15/2002

***Contact:*** James W. Weaver

Chen, P.H., Richardson, S.D., Krasner, S.W., Majetich, G., and Glish, G. Hydrogen abstraction and decomposition of bromopicrin and other trihalogenated disinfection by-products by GC/MS. *Environmental Science & Technology* 36 (15):3362-3371 (2002). EPA/600/J-03/153. 8/15/2002

***Contact:*** Susan D. Richardson

Richardson, S.D. Environmental mass spectrometry: emerging contaminants and current issues. *Analytical Chemistry* 74 (12):2719-2742 (2002). EPA/600/J-03/154. 6/15/2002

***Contact:*** Susan D. Richardson

## ***RESEARCH RPT***

Weinberg, H.S., Krasner, S.W., Richardson, S.D., and Thruston, Jr., A.D. The occurrence of disinfection by-products of health concern in drinking water: results of a nationwide DBP occurrence study. 2002. EPA/600/R-02/068 (NTIS PB2003-106823). 9/30/2002

***Contact:*** Susan D. Richardson

## ***SYMPOS/CONF***

Bird, S.L., Harrison, J., Exum, L.R., Alberty, S.W., and Perkins, C. Screening to identify and prevent urban storm water problems: estimating impervious area accurately and inexpensively. 2002 National Water Quality Monitoring Council Conference, Madison, WI, May 20-23, 2002. 2002. EPA/600/A-03/024 (NTIS PB2003-106604), <http://www.nwqmc.org/NWQMC-Proceedings/Papers-Alphabetical%20by%20First%20Name/Jim> 5/23/2002

***Contact:*** Sandra L. Bird

Rashleigh, B. Ecological endpoint modeling for TMDLs: effects of sediment on fish populations. Presented at: National Total Maximum Daily Loads Science and Policy Conference, Phoenix, AZ, November 13-16, 2002. EPA/600/A-03/020. 11/13/2002

***Contact:*** Brenda Rashleigh

Frick, W.E., Baumgartner, D.J., Denton, D.L., and Roberts, P.J.W. New developments of Visual Plumes - evaluation of bacterial pollution. Presented at: 2nd International Conference on Marine Waste Water Discharges, Istanbul, Turkey, September 16-20, 2002. EPA/600/A-03/025. 9/16/2002

***Contact:*** Walter E. Frick

Weaver, J.W., Tebes-Stevens, C.L., and Wolfe, K. Uncertainty in model predictions-plausible outcomes from estimates of input ranges. Presented at: Brownfields 2002, Charlotte, NC, November 13-15, 2002. EPA/600/A-03/021. 11/13/2002

***Contact:*** James W. Weaver

## ***NERL/ERD Publications***

***Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)***

**Jan 1, 2002 - Dec 31, 2002**

***Presented Published***

Weaver, J.W., and Small, M.C. MTBE is a little bit ok?. Presented at: National Groundwater Association Petroleum Hydrocarbons Conference, Atlanta, GA, November 6-8, 2002.  
EPA/600/A-03/022.

11/6/2002

***Contact:*** James W. Weaver



# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

Jan 1, 2001 - Dec 31, 2001

***Presented Published***

## ***ABSTRACT/ORAL***

Russo, R.C. Development of marine water quality criteria. Presented at: Third International Conference on Marine Pollution and Ecotoxicology, Kowloon, Hong Kong, June 10-16, 2001. 6/10/2001

***Contact:*** Rosemarie C. Russo

Russo, R.C., and Carousel, R.F. Eutrophication modeling capabilities for water quality and integration towards ecological endpoints. Presented at: Sixth International Symposium on Fish Physiology, Toxicology, and Water Quality, La Paz, B.C.S., Mexico, January 22-26, 2001. 1/22/2001

***Contact:*** Rosemarie C. Russo

Opsahl, S.P., and Zepp, R.G. Photochemically-induced transformations of dissolved organic matter in riverine waters. Presented at: American Society of Limnology and Oceanography Aquatic Sciences Meeting, Albuquerque, NM, February 12-16, 2001. 2/14/2001

***Contact:*** Richard G. Zepp

Anderson, S.L., Zepp, R.G., Machula, J., Hansen, L.J., Cherr, G., and Mueller, E. Assessing UV irradiance in Caribbean reef coral and DNA damage in their coral and zooxanthellae. Presented at: American Society of Limnology and Oceanography Aquatic Sciences Meeting, Albuquerque, NM, February 12-16, 2001. 2/12/2001

***Contact:*** Richard G. Zepp

Pinto, A., Bustamante, M., Viana, L., Zepp, R.G., Burke, Jr., R.A., Molina, M., and Kisselle, K. Soil emissions of CO<sub>2</sub> and CO in tropical savannas of Central Brazil under different fire regimes. Presented at: Large Scale Biosphere-Atmosphere Experiment in Amazonia Open Meeting, Atlanta, GA, February 12-14, 2001. 2/12/2001

***Contact:*** Richard G. Zepp

Zepp, R.G. Photoreactions in surface waters and their role in biogeochemical cycles. Presented at: American Society of Limnology and Oceanography Aquatic Sciences Meeting, Albuquerque, NM, February 12-16, 2001. 2/14/2001

***Contact:*** Richard G. Zepp

Kisselle, K., Zepp, R.G., Burke, Jr., R.A., Pinto, A., and Bustamante, M. Photochemical effects on NO<sub>x</sub> and CO emissions in a Brazilian savanna. Presented at: Ecological Society of America Meeting, Madison, WI, August 5-10, 2001. 8/5/2001

***Contact:*** Richard G. Zepp

Bustamante, M., Pinto, A., Viana, L., Nardoto, G., Zepp, R.G., Burke, Jr., R.A., Molina, M., and Kisselle, K. Effects of prescribed fires on nitrogen fluxes in savanna formations of Central Brazil. Presented at: Large Scale Biosphere-Atmosphere Experiment in Amazonia Open Meeting, Atlanta, GA, February 12-14, 2001. 2/12/2001

***Contact:*** Richard G. Zepp

Zepp, R.G., White, E., and Vaughan, P.P. Influence of dissolved organic matter on agrochemical photoreactions in aquatic environments. Presented at: 221st American Chemical Society National Meeting, San Diego, CA, April 1-5, 2001. 4/1/2001

***Contact:*** Richard G. Zepp

Zepp, R.G. Interactions of solar ultraviolet radiation and dissolved organic matter in freshwater and marine environments. Presented at: Lehigh University - Invited Speaker, Bethlehem, PA, March 8, 2001. 3/8/2001

***Contact:*** Richard G. Zepp

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2001 - Dec 31, 2001**

***Presented Published***

Bailey, G.W. Hypoxia effect on the transformation, speciation, bioavailability and toxicity of chemical contaminants in the hypoxic zone. Presented at: Sixth International Symposium on Fish Physiology, Toxicology, and Water Quality, La Paz, B.C.S., Mexico, January 22-26, 2001. 1/22/2001

**Contact:** George W. Bailey

Sawunyama, P., and Bailey, G.W. DFT study of the hydrolysis of some s-triazines. Presented at: 53rd Annual Meeting of the Southeastern Region of the American Chemical Society, Savannah, GA, September 23-26, 2001. 9/23/2001

**Contact:** George W. Bailey

McCutcheon, S.C. Chlorinated solvent plume control. Presented at: North Atlantic Treaty Organization Advanced Study Institute Innovative Approaches to the On-Site Assessment and Remediation of Contaminated Sites, Prague, Czech Republic, May 24-June 2, 2001. 5/24/2001

**Contact:** Steve C. McCutcheon

Ambrose, Jr., R.B., and Wool, T.A. Modeling mercury fate in seven Georgia watersheds. Presented at: Workshop on the fate, transport, and transformation of mercury in aquatic and terrestrial environments, West Palm Beach, FL, May 8-10, 2001. 5/8/2001

**Contact:** Robert B. Ambrose

Garrison, A.W., and Ellington, J.J. Analysis and fate of enantiomers of pesticides and other environmental pollutants. Presented at: 221st American Chemical Society National Meeting, San Diego, CA, April 1-5, 2001. 4/1/2001

**Contact:** A. Wayne Garrison

Garrison, A.W. Separation of enantiomers of environmental pollutants. Presented at: 221st American Chemical Society National Meeting, San Diego, CA, April 1-5, 2001. 4/1/2001

**Contact:** A. Wayne Garrison

Garrison, A.W. Capillary electrophoresis for enantiomer separation and measurement of enantioselectivity of chiral pollutants in the environment. Presented at: 221st American Chemical Society National Meeting, San Diego, CA, April 1-5, 2001. 4/1/2001

**Contact:** A. Wayne Garrison

Bailey, G.W., and Sawunyama, P. The integrated use of computational chemistry, scanning probe microscopy, and virtual reality to predict the chemical reactivity of environmental surfaces. Presented at: 221st American Chemical Society National Meeting, San Diego, CA, April 1-5, 2001. 4/1/2001

**Contact:** George W. Bailey

Collette, T.W., and Williams, T.L. Raman analysis of fertilizer and plant tissue extracts for perchlorate contamination. Presented at: Eastern Analytical Symposium, Atlantic City, NJ, October 1-4, 2001. 10/1/2001

**Contact:** Timothy W. Collette

Ellington, J.J., and Evans, J.J. Method for the determination of perchlorate anion in plant and solid matrices by ion chromatography. Presented at: 22nd Annual Society of Environmental Toxicology and Chemistry Meeting, Baltimore, MD, November 11-15, 2001. 11/11/2001

**Contact:** J. Jackson Ellington

Dai, T., Wool, T.A., and Ambrose, Jr., R.B. Development of a watershed-based mercury pollution characterization system. Presented at: Ecological Society of America Meeting, Madison, WI, August 5-10, 2001. 8/5/2001

**Contact:** Robert B. Ambrose



# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2001 - Dec 31, 2001**

***Presented   Published***

Wommack, E., Shira, B.A., Avants, J., and Garrison, A.W. Bacterially-mediated degradation of a chiral disinfection byproduct. Presented at: American Society for Microbiology Annual Meeting, Orlando, FL, May 20-24, 2001. 5/20/2001

***Contact:*** A. Wayne Garrison

Sawunyama, P., and Bailey, G.W. Interactions between organic compounds and cyclodextrin-clay systems. Presented at: 222nd American Chemical Society National Meeting, Chicago, IL, August 26-30, 2001. 8/26/2001

***Contact:*** George W. Bailey

Collette, T.W., and Williams, T.L. The role of Raman spectroscopy in the analytical chemistry of potable water. Presented at: 222nd American Chemical Society National Meeting, Chicago, IL, August 26-30, 2001. 8/26/2001

***Contact:*** Timothy W. Collette

Collette, T.W., and Williams, T.L. Determination of perchlorate in some fertilizers and plant tissue by Raman spectroscopy. Presented at: 222nd American Chemical Society National Meeting, Chicago, IL, August 25-30, 2001. 8/25/2001

***Contact:*** Timothy W. Collette

Weber, E.J., Kenneke, J.F., and Hoferkamp, L.A. Reactivity of chemical reductants as a function of redox zonation. Presented at: Third International Conference on Groundwater Quality, Sheffield, United Kingdom, June 18-21, 2001. 6/18/2001

***Contact:*** Eric J. Weber

Ellington, J.J., and Evans, J.J. Effects of temperature and solvent composition on the CHIRALCEL OJ separation of chiral organophosphorus pesticides. Presented at: 22nd Annual Society of Environmental Toxicology and Chemistry Meeting, Baltimore, MD, November 11-15, 2001. 11/11/2001

***Contact:*** J. Jackson Ellington

Ellington, J.J., Evans, J.J., Prickett, K.B., and Champion, W.L. HPLC separation of chiral organophosphorus pesticides on polysaccharide chiral stationary phases. Presented at: 22nd Annual Society of Environmental Toxicology and Chemistry Meeting, Baltimore, MD, November 11-15, 2001. 11/11/2001

***Contact:*** J. Jackson Ellington

Sealock, G.A., and Wolfe, N.L. 2,4,6-Trinitrotoluene transformation in planted, soil columns. Presented at: 22nd Annual Society of Environmental Toxicology and Chemistry Meeting, Baltimore, MD, November 11-15, 2001. 11/11/2001

***Contact:*** N. Lee Wolfe

Garrison, A.W., Jones, W.J., Avants, J., and Jarman, J.L. Measurement of the enantioselective transformation of chiral pollutants by capillary electrophoresis. Presented at: 22nd Annual Society of Environmental Toxicology and Chemistry Meeting, Baltimore, MD, November 11-15, 2001. 11/11/2001

***Contact:*** A. Wayne Garrison

Hoehamer, C.F., and Wolfe, N.L. Biotransformation of 2,4,6-trinitrotoluene (TNT) by a plant-associated fungus *Fusarium oxysporum*. Presented at: 22nd Annual Society of Environmental Toxicology and Chemistry Meeting, Baltimore, MD, November 11-15, 2001. 11/11/2001

***Contact:*** N. Lee Wolfe

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2001 - Dec 31, 2001**

***Presented Published***

Bouchard, D.C. Cosolvent effects on organic chemical partitioning to sediment organic carbon. Presented at: Society of Environmental Toxicology and Chemistry Organic Soil Contaminants Conference, Copenhagen, Denmark, September 2-5, 2001. 9/2/2001

**Contact:** Dermont C. Bouchard

Ellington, J.J., and Wolfe, N.L. Phytoremediation: using plants to clean up contaminated soil, groundwater, and wastewater. Presented at: First Baltic Symposium on Environmental Chemistry, Tartu, Estonia, September 26-29, 2001. 9/26/2001

**Contact:** J. Jackson Ellington

Bailey, G.W., and Sawunyama, P. Biosurfaces: a nonscale overview. Presented at: Soil Science Society of America Annual Meeting, Charlotte, NC, October 22-25, 2001. 10/22/2001

**Contact:** George W. Bailey

Ambrose, Jr., R.B., and Wool, T.A. Modeling tools used for mercury TMDLs in Georgia rivers. Presented at: Georgia Water Resources Conference, Athens, GA, March 26-27, 2001. 3/26/2001

**Contact:** Robert B. Ambrose

O'Neill, W., Jones, W.J., Whittemore, A., and Avants, J. Transformation of chiral pollutants in soil and sediment microcosms. Presented at: 22nd Annual Society of Environmental Toxicology and Chemistry Meeting, Baltimore, MD, November 11-15, 2001. 11/11/2001

**Contact:** William Jack Jones

Loux, N.T. The role of aqueous thin film evaporative cooling on rates of elemental mercury air-water exchange under temperature disequilibrium conditions. Presented at: Georgia Water Resources Conference, Athens, GA, March 26-27, 2001. 3/26/2001

**Contact:** Nicholas T. Loux

Loux, N.T., and Washington, J.W. Errors in applying low ion-strength activity coefficient algorithms to higher ionic-strength aquatic media. Presented at: American Society for Testing and Materials 11th Symposium on Environmental Toxicology and Risk Assessment, Phoenix, AZ, April 2-4, 2001. 4/2/2001

**Contact:** Nicholas T. Loux

Loux, N.T. The effect of salinity on rates of elemental mercury air/water exchange. Presented at: International Workshop on Trends and Effects of Heavy Metals in the Arctic, McLean, VA, June 18-22, 2001. 6/18/2001

**Contact:** Nicholas T. Loux

Bird, S.L., Exum, L.R., Alberty, S.W., and Perkins, C. Estimating impervious cover from regionally available data. Presented at: US Environmental Protection Agency Regional Vulnerability Assessment Workshop, Research Triangle Park, NC, October 29-30, 2001. 10/29/2001

**Contact:** Sandra L. Bird

Rashleigh, B. Effects of habitat degradation on biological endpoints in the South Fork Broad river basin, Georgia. Presented at: Georgia Water Resources Conference, Athens, GA, March 26-27, 2001. 3/26/2001

**Contact:** Brenda Rashleigh

Burke, Jr., R.A. Use of GC-MS/combustion/IRMS to identify and determine the stable carbon isotopic ratio of individual lipids. Presented at: 221st American Chemical Society National Meeting, San Diego, CA, April 1-5, 2001. 4/1/2001

**Contact:** Roger A. Burke

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2001 - Dec 31, 2001**

***Presented   Published***

Rashleigh, B., and Johnston, J.M. Simulation coastal plain stream fish community response to nonpoint source pollution using linked hydrologic-ecological models. Presented at: Ecological Society of America Meeting, Madison, WI, August 5-10, 2001. 8/5/2001

***Contact:***   Brenda Rashleigh

Bird, S.L. Alternative futures of urbanization: a research demonstration across the Mid-Atlantic region. Presented at: International Association for Landscape Ecology Meeting, Tempe, AZ, April 27, 2001. 4/27/2001

***Contact:***   Sandra L. Bird

Loux, N.T. Effective acidity constant behavior near zero charge conditions. Presented at: 222nd American Chemical Society National Meeting, Chicago, IL, August 26-30, 2001. 8/26/2001

***Contact:***   Nicholas T. Loux

Johnston, J.M., and Crossley, Jr., D.A. Neglected components of biodiversity: soil oribatid mites, community structure and soil recovery. Presented at: Soil Ecology Society Conference, Pine Mountain, GA, May 20-23, 2001. 5/20/2001

***Contact:***   John M. Johnston

Molina, M. Microbial diversity in surface sediments: a comparison of two estuarine continuums. Presented at: American Society of Limnology and Oceanography Aquatic Sciences Meeting, Albuquerque, NM, February 12-16, 2001. 2/14/2001

***Contact:***   Marirosa Molina

Burke, Jr., R.A. Use of GC-MS/combustion/IRMS to identify and determine the stable carbon isotopic ratio of individual lipids. Presented at: Universidad Autonoma de Baja California, Ensenada, Mexico, October 9-13, 2001. 10/9/2001

***Contact:***   Roger A. Burke

Earle, R., and Weaver, J.W. Simulation of a methyl tert-butyl ether (MTBE) plume with MODFLOW, MT3D and the hydrocarbon spill screening model (HSSM). Presented at: MODFLOW 2001 and Other Modeling Odysseys Conference, Golden, CO, September 11-14, 2001. 9/11/2001

***Contact:***   James W. Weaver

Richardson, S.D., and Karst, U. A new tailor-made derivatizing agent for identifying polar carbonyl DBPs in drinking water. Presented at: 221st American Chemical Society National Meeting, San Diego, CA, April 1-5, 2001. 4/1/2001

***Contact:***   Susan D. Richardson

Simmons, J.E., Richardson, S.D., Speth, T.F., Miltner, R.J., Schenck, K.M., Rice, G., Teuschler, L.K., Krasner, S.W., and Weinberg, H. Integrated technology-based toxicology studies on drinking water disinfection byproducts (DBPs). Presented at: Workshop on Application of Technology to Chemical Mixture Research, Fort Collins, CO, January 8-11, 2001. 1/8/2001

***Contact:***   Susan D. Richardson

Weaver, J.W. Localized recharge influences on MTBE transport and well placement considerations. Presented at: 17th Annual International Conference on Contaminated Soils, Sediments and Water, Amherst, MA, October 21-25, 2001. 10/21/2001

***Contact:***   James W. Weaver

Frick, W.E. Auto-expansive flow. Presented at: 2001: An Ocean Odyssey Meeting, Mar del Plata, Argentina, October 21-28, 2001. 10/21/2001

***Contact:***   Walter E. Frick

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2001 - Dec 31, 2001**

***Presented Published***

Richardson, S.D., and Furlong, E.T. Emerging contaminants: what are the current hot environmental pollutants and what is next?. Presented at: Federation of Analytical Chemistry and Spectroscopy Societies Conference, Detroit, MI, October 7-12, 2001. 10/7/2001

***Contact:*** Susan D. Richardson

Richardson, S.D. The role of GC/MS and LC/MS in the discovery of drinking water disinfection by-products. Presented at: 222nd American Chemical Society National Meeting, Chicago, IL, August 26-30, 2001. 8/26/2001

***Contact:*** Susan D. Richardson

Richardson, S.D., Thruston, Jr., A.D., Weinberg, H.S., and Krasner, S.W. A nationwide drinking water disinfection by-product occurrence study - identification of new and toxicologically significant compounds with mass spectrometry. Presented at: Federation of Analytical Chemistry and Spectroscopy Societies Conference, Detroit, MI, October 7-12, 2001. 10/7/2001

***Contact:*** Susan D. Richardson

Weaver, J.W., and Small, M.C. Decision-making, science and gasoline additives. Presented at: American Geophysical Union Fall Meeting, San Francisco, CA, December 10-14, 2001. 12/10/2001

***Contact:*** James W. Weaver

Kraemer, S.R. Subsurface residence times as an algorithm for aquifer sensitivity mapping: testing the concept with ground water models in the Contentnea Creek basin, North Carolina, USA. Presented at: MODFLOW 2001 and Other Modeling Odysseys Conference, Golden, CO, September 11-14, 2001. 9/11/2001

***Contact:*** Stephen R. Kraemer

Frick, W.E. The Bernoulli equation and compressible flow theories. Presented at: American Geophysical Union Meeting, Fort Collins, CO, April 2-5, 2001. 4/2/2001

***Contact:*** Walter E. Frick

Frick, W.E. Predicting the buildup of pollutant concentrations using EPA's visual plumes model. Presented at: Estuarine Research Federation Meeting, St. Petersburg, FL, November 4-8, 2001. 11/4/2001

***Contact:*** Walter E. Frick

Frick, W.E. Visual plumes mixing zone modeling software. Presented at: Fifth International Marine Environmental Modelling Seminar, New Orleans, LA, October 9-11, 2001. 10/9/2001

***Contact:*** Walter E. Frick

## ***BOOK CHAPTER***

Williams, T.L., and Collette, T.W. "Environmental applications of Raman spectroscopy to aqueous systems." In: Handbook of Raman Spectroscopy, Chapter 17 Lewis, I.R. and H.G.M. Edwards (Ed.), New York, NY: Marcel Dekker, Inc. 2001, 683-731. EPA/600/A-03/035. 8/1/2001

***Contact:*** Timothy W. Collette

Bailey, G.W., Akim, L.G., and Shevchenko, S.M. "Predicting chemical reactivity of humic substances for minerals and xenobiotics: use of computational chemistry, scanning probe microscopy and virtual reality." In: Humic Substances and Chemical Contaminants, Chapter 2 Clapp, C.E., M.H.B. Hayes, N. Senesi, P.R. Bloom, and P.M. Jardine (Ed.), Madison, WI: Soil Science Society of America 2001, 41-72. EPA/600/A-03/018. 12/1/2001

***Contact:*** George W. Bailey



# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

Jan 1, 2001 - Dec 31, 2001

*Presented Published*

Johnston, J.M. "A scientific and technological framework for evaluating comparative risk in ecological risk assessments." In: Modelling of Environmental Chemical Exposure and Risk Dordrecht, The Netherlands: Kluwer Academic Publishers 2001, 133-150. EPA/600/A-03/036.

**Contact:** John M. Johnston

1/15/2001

Hayter, E.J., and Gu, R. "Prediction of contaminated sediment transport in the Maurice River-Union Lake, New Jersey, USA." In: Coastal and Estuarine Fine Sediment Processes, Proceedings in Marine Science McAnally, W.H. and A.J. Mehta (Ed.), New York, NY: Elsevier Science 2001, 439-458. EPA/600/A-03/017.

**Contact:** Earl Hayter

7/1/2001

## ***JOURNAL***

Opsahl, S.P., Jones, J.W., and Zepp, R.G. Photochemically-induced alteration of stable carbon isotope ratios ( $\delta$  C-13) in terrigenous dissolved organic carbon. Geophysical Research Letters 28 (12):2417-2420 (2001). EPA/600/J-02/102.

**Contact:** Richard G. Zepp

6/15/2001

Anderson, S.L., Machula, J., Cherr, G., Zepp, R.G., Santavy, D.L., Hansen, L.J., and Mueller, E. Indicators of UV exposure in corals and their relevance to global climate change and coral bleaching. Human and Ecological Risk Assessment 7 (5):1271-1282 (2001). EPA/600/J-02/101.

**Contact:** Richard G. Zepp

10/1/2001

Mazur, C.S., and Jones, W.J. Hydrogen concentrations in sulfate-reducing estuarine sediments during PCE dehalogenation. Environmental Science & Technology 35 (24):4783-4788 (2001). EPA/600/J-02/088.

**Contact:** William Jack Jones

12/15/2001

Ellington, J.J., Evans, J.J., Prickett, K.B., and Champion, W.L., Jr. High performance liquid chromatographic separation of the enantiomers of organophosphorus pesticides on polysaccharide chiral stationary phases. Journal of Chromatography A 928 (2):145-154 (2001). EPA/600/J-02/092.

**Contact:** J. Jackson Ellington

9/14/2001

Jones, W.J., and Ananyeva, N.D. Correlations between pesticide transformation rate and microbial respiration activity in soil of different ecosystems. Biology and Fertility of Soils 33 (6):477-483 (2001). EPA/600/J-02/087.

**Contact:** William Jack Jones

6/25/2001

Ellington, J.J., Wolfe, N.L., Garrison, A.W., Evans, J.J., Avants, J., and Teng, Q. Determination of perchlorate in tobacco plants and tobacco products. Environmental Science & Technology 35 (15):3213-3218 (2001). EPA/600/J-02/091.

**Contact:** J. Jackson Ellington

8/1/2001

McCutcheon, S.C., and Rock, S.A. Phytoremediation: state of the science conference and other developments. Editorial introduction and special commentary. International Journal of Phytoremediation 3 (1):1-11 (2001). EPA/600/J-02/084.

**Contact:** Steve C. McCutcheon

5/7/2001

Yan, L., and Bailey, G.W. Sorption and abiotic redox transformation of nitrobenzene at the smectite-water interface. Journal of Colloid and Interface Science 241 (1):142-153 (2001). EPA/600/J-02/099.

**Contact:** George W. Bailey

9/1/2001

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2001 - Dec 31, 2001**

***Presented Published***

- Sawunyama, P., and Bailey, G.W. Modeling the interaction of agrochemicals with environmental surfaces: pesticides on rutile and organo-rutile surfaces. *Journal of Molecular Structure (Theochem)* 541 (1-3):119-129 (2001). EPA/600/J-02/097. 5/31/2001  
**Contact:** George W. Bailey
- Collette, T.W., Williams, T.L., and D'Angelo, J.C. Optimization of Raman spectroscopy for speciation of organics in water. *Applied Spectroscopy* 55 (6):750-766 (2001). 6/15/2001  
**Contact:** Timothy W. Collette
- Sawunyama, P., Jackson, M., and Bailey, G.W. Interactions of methyl orange with cyclodextrin/sodium-montmorillonite systems probed by uv-visible spectroscopy. *Journal of Colloid and Interface Science* 237 (2):153-157 (2001). EPA/600/J-02/100. 5/15/2001  
**Contact:** George W. Bailey
- Arnold, J.W., Boothe, D.H., and Bailey, G.W. Parameters of treated stainless steel surfaces important for resistance to bacterial contamination. *Transactions of the ASAE* 44 (2):347-356 (2001). EPA/600/J-02/096. 4/15/2001  
**Contact:** George W. Bailey
- Wong, C.S., Garrison, A.W., and Foreman, W.T. Enantiomeric composition of chiral polychlorinated biphenyl atropisomers in aquatic bed sediment. *Environmental Science & Technology* 35 (1):33-39 (2001). EPA/600/J-02/090. 1/15/2001  
**Contact:** A. Wayne Garrison
- Weber, E.J., Colon, D., and Baughman, G.L. Sediment-associated reactions of aromatic amines: 1. Elucidation of sorption mechanisms. *Environmental Science & Technology* 35 (12):2470-2475 (2001). EPA/600/J-02/078. 6/15/2001  
**Contact:** Eric J. Weber
- Williams, T.L., Martin, R.B., and Collette, T.W. Raman spectroscopic analysis of fertilizers and plant tissue for perchlorate. *Applied Spectroscopy* 55 (8):967-983 (2001). EPA/600/J-02/094. 8/15/2001  
**Contact:** Timothy W. Collette
- Wong, C.S., Garrison, A.W., Smith, P.D., and Foreman, W.T. Enantiomeric composition of chiral polychlorinated biphenyl atropisomers in aquatic and riparian biota. *Environmental Science & Technology* 35 (12):2448-2454 (2001). EPA/600/J-02/089. 6/15/2001  
**Contact:** A. Wayne Garrison
- Collette, T.W. Prediction of molecular properties with mid-infrared spectra and interferograms. *Applied Spectroscopy* 55 (6):1067-1078 (2001). EPA/600/J-02/093. 8/15/2001  
**Contact:** Timothy W. Collette
- Sawunyama, P., and Bailey, G.W. Quantum mechanical study of the competitive hydration between protonated quinazoline and Li<sup>+</sup>, NA<sup>+</sup>, and Ca<sup>2+</sup> ions. *Journal of Physical Chemistry A* 105 (42):9717-9724 (2001). EPA/600/J-02/098. 10/25/2001  
**Contact:** George W. Bailey
- Shi, W., Sun, M.Y., Molina, M., and Hodson, R.E. Variability in the distribution of lipid biomarkers and their molecular isotopic composition in Altamaha estuarine sediments: implications for the relative contribution of organic matter from various sources. *Organic Geochemistry* 32 (4):453-467 (2001). EPA/600/J-02/083. 4/1/2001  
**Contact:** Marirosa Molina



# ***NERL/ERD Publications***

***Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)***

**Jan 1, 2001 - Dec 31, 2001**

***Presented Published***

Loux, N.T., and Anderson, M.A. Mobil ion activities at charged interfaces. Colloids & Surfaces A: Physicochemical & Engineering Aspects 177 (2/3):123-131 (2001). EPA/600/J-02/086. 2/28/2001

***Contact:*** Nicholas T. Loux

Loux, N.T. Monitoring cyclical air-water elemental mercury exchange. Journal of Environmental Monitoring 3 (1):43-48 (2001). EPA/600/J-02/085. 1/30/2001

***Contact:*** Nicholas T. Loux

Richardson, S.D. Mass spectrometry in environmental sciences. Chemical Reviews 101 (2):211-254 (2001). EPA/600/J-02/081. 1/16/2001

***Contact:*** Susan D. Richardson

Tebes-Stevens, C.L., Espinoza, F., and Valocchi, A.J. Evaluating the sensitivity of a subsurface multicomponent reactive transport model with respect to transport and reaction parameters. Journal of Contaminant Hydrology 52 (1-4):3-27 (2001). EPA/600/J-02/080. 11/30/2001

***Contact:*** Caroline Stevens

Washington, J.W., and Cameron, B.A. Evaluating degradation rates of chlorinated organics in groundwater using analytical models. Environmental Toxicology and Chemistry 20 (9):1909-1915 (2001). EPA/600/J-02/079. 9/1/2001

***Contact:*** John Washington

Richardson, S.D. Water analysis. Analytical Chemistry 73 (12):2719-2734 (2001). EPA/600/J-02/082. 6/15/2001

***Contact:*** Susan D. Richardson

## ***RESEARCH RPT***

Burns, L.A. Probabilistic aquatic exposure assessment for pesticides 1: Foundations. 2001. EPA/600/R-01/071 (NTIS PB2003-106605). 10/15/2001

***Contact:*** Lawrence A. Burns

## ***SYMPOS/CONF***

Krasner, S.W., Pastor, S., Chinn, R., Scimmenti, M.J., Weinberg, H.S., Richardson, S.D., and Thruston, Jr., A.D. The occurrence of a new generation of DBPs (beyond the ICR). Presented at: American Water Works Association Water Quality Technical Conference, Nashville, TN, November 11-15, 2001. 2001. EPA/600/A-03/031. 11/11/2001

***Contact:*** Susan D. Richardson

Weinberg, H.S., Krasner, S.W., and Richardson, S.D. Determination of new carbonyl-containing disinfection by-products in drinking water. Presented at: American Water Works Association Water Quality Technical Conference, Nashville, TN, November 11-15, 2001. EPA/600/A-03/032. 11/11/2001

***Contact:*** Susan D. Richardson

# ***NERL/ERD Publications***

***Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)***

**Jan 1, 2000 - Dec 31, 2000**

***Presented Published***

## ***ABSTRACT/ORAL***

Xie, H., Wang, Y., Cai, W.J., Zafiriou, O.C., and Zepp, R.G. Photochemical alteration of dissolved organic matter: effects on the concentration and acidities of ionizable sites in dissolved organic matter in the Satilla River of Georgia, USA. Presented at: 10th International Meeting of the International Humic Substance Society, Toulouse, France, July 24-28, 2000. 7/24/2000

***Contact:*** Richard G. Zepp

Anderson, S.L., Machula, J., Cherr, G., Zepp, R.G., Santavy, D.L., Hansen, L.J., and Mueller, E. Indicators of UV exposure in coral and their relevance to global climate change and coral bleaching. Presented at: US Environmental Protection Agency Symposium on Indicators in Health and Environmental Risk Assessment, Research Triangle Park, NC, June 5-6, 2000. 6/5/2000

***Contact:*** Richard G. Zepp

Anderson, S.L., Machula, J., Cherr, G., Zepp, R.G., Santavy, D.L., Hansen, L.J., and Mueller, E. Indicators of UV exposure in corals: relevance to global climate change and coral bleaching. Presented at: Ninth International Coral Reef Symposium, Bali, Indonesia, October 23-27, 2000. 10/23/2000

***Contact:*** Richard G. Zepp

Zepp, R.G., Moran, M.A., and Sheldon, W. Interactions between photochemical and microbial decomposition in modifying the biological availability and optical properties of estuarine dissolved organic matter. Presented at: American Geophysical Union Ocean Sciences Meeting, San Antonio, TX, January 24-28, 2000. 1/24/2000

***Contact:*** Richard G. Zepp

Vaughan, P.P., Blough, N.V., and Zepp, R.G. Photochemical production of reactive oxygen species by constituents of colored dissolved organic matter and coastal river waters in the southeastern United States. Presented at: American Geophysical Union Ocean Sciences Meeting, San Antonio, TX, January 24-28, 2000. 1/24/2000

***Contact:*** Richard G. Zepp

Opsahl, S.P. Photochemical transformations of dissolved organic matter in a blackwater river. Presented at: American Geophysical Union Ocean Sciences Meeting, San Antonio, TX, January 24-28, 2000. 1/24/2000

***Contact:*** Richard G. Zepp

Zepp, R.G., Davis, E., Anderson, S.L., Santavy, D.L., Hansen, L.J., and Patterson, K. Role of DOM photoreactions in controlling UV exposure of coral assemblages in the Florida Keys. Presented at: The International Chemical Congress of Pacific Basin Societies, Honolulu, HI, December 14-19, 2000. 12/14/2000

***Contact:*** Richard G. Zepp

Hoferkamp, L.A., and Weber, E.J. Characterizing the abiotic reductants for nitroaromatic compounds as a function of redox zonation in anoxic sediments. Presented at: Goldschmidt 2000 Conference for Geochemistry, Oxford, UK, September 3-8, 2000. 9/3/2000

***Contact:*** Eric J. Weber

Kenneke, J.F., and Weber, E.J. Reductive dehalogenation of halomethanes in natural and model systems: QSAR analysis. Presented at: 220th American Chemical Society National Meeting, Washington, DC, August 20-24, 2000. 8/20/2000

***Contact:*** John Kenneke

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2000 - Dec 31, 2000**

***Presented Published***

Weber, E.J., Kenneke, J.F., Washington, J.W., and Hoferkamp, L.A. Reactivity of chemical reductants as a function of redox zonation. Presented at: Gordon Research Conference 2000 on Environmental Sciences, Plymouth, NH, June 25-30, 2000. 6/26/2000

**Contact:** Eric J. Weber

Weber, E.J., Colon, D., and Baughman, G.L. Sediment-associated reactions of aromatic amines: QSAR development. Presented at: 220th American Chemical Society National Meeting, Washington, DC, August 20-24, 2000. 8/20/2000

**Contact:** Eric J. Weber

Cyterski, M.J. Hydrology and sediment modeling using the BASINS non-point source model. Presented at: 2000 Annual Meeting and International Conference of the American Institute of Hydrology, Research Triangle Park, NC, November 5-8, 2000. 11/5/2000

**Contact:** Mike Cyterski

McCutcheon, S.C., and Susarla, S. Remediation of perchlorate contaminated ground water and surface water. Presented at: University of Georgia Biological and Agricultural Department and the American Society of Agricultural Engineers, Athens, GA, May 22, 2000. 5/22/2000

**Contact:** Steve C. McCutcheon

Collette, T.W., and Williams, T.L. Perchlorate in fertilizers?: analysis by Raman spectroscopy. Presented at: 220th American Chemical Society National Meeting, Washington, DC, August 20-24, 2000. 8/21/2000

**Contact:** Timothy W. Collette

Wong, C.S., Garrison, A.W., Jones, W.J., Howell, L., and Avants, J. Formation and enantioselective biodegradation of the enantiomers of bromochloroacetic acid. Presented at: 21st Annual Society of Environmental Toxicology and Chemistry Meeting, Nashville, TN, November 12-16, 2000. 11/12/2000

**Contact:** A. Wayne Garrison

Ellington, J.J., and Evans, J.J. Determination of perchlorate at parts-per-billion levels in plants by ion chromatography. Presented at: 21st Annual Society of Environmental Toxicology and Chemistry Meeting, Nashville, TN, November 12-16, 2000. 11/12/2000

**Contact:** J. Jackson Ellington

McCutcheon, S.C. The science and practice of phytoremediation. Presented at: US Environmental Protection Agency Phytoremediation Conference, Boston, MA, May 1-2, 2000. 5/1/2000

**Contact:** Steve C. McCutcheon

Susarla, S., and McCutcheon, S.C. Accumulation and fate of perchlorate in plants. Presented at: US Environmental Protection Agency Phytoremediation Conference, Boston, MA, May 1-2, 2000. 5/1/2000

**Contact:** Steve C. McCutcheon

Wolfe, N.L., Ellington, J.J., Garrison, A.W., Evans, J.J., and Avants, J. Accumulation of perchlorate in tobacco plants and tobacco products. Presented at: 220th American Chemical Society National Meeting, Washington, DC, August 20-24, 2000. 8/21/2000

**Contact:** N. Lee Wolfe

Wolfe, N.L., Prakash, O., Hoehamer, C., and Mazur, C.S. Enzymatic processes used by plants to degrade organic compounds. Presented at: US Environmental Protection Agency Phytoremediation Conference, Boston, MA, May 1-2, 2000. 5/1/2000

**Contact:** N. Lee Wolfe

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2000 - Dec 31, 2000**

***Presented   Published***

Collette, T.W., and Williams, T.L. Speciation of complex organic contaminants in water with Raman spectroscopy. Presented at: 30th Annual International Symposium on Environmental Analytical Chemistry, Espoo, Finland, June 11-18, 2000. 6/11/2000

**Contact:** Timothy W. Collette

Mazur, C.S., and Jones, W.J. Comparison of hydrogen concentrations in PCE-dehalogenating and sulfate-reducing estuarine sediments. Presented at: 220th American Chemical Society National Meeting, Washington, DC, August 20-24, 2000. 8/20/2000

**Contact:** Christopher Mazur

Arnold, J.W., and Bailey, G.W. Comparison of scanning electron and atomic force microscopy of surface finishes on stainless steel that reduce bacterial attachment. Presented at: Scanning 2000 Meeting, San Antonio, TX, May 9-12, 2000. 5/9/2000

**Contact:** George W. Bailey

Yan, L., and Bailey, G.W. Molecular dynamics modeling of sorption of pesticides onto the surfaces of kaolinite. Presented at: 220th American Chemical Society National Meeting, Washington, DC, August 20-24, 2000. 8/20/2000

**Contact:** George W. Bailey

Yan, L., and Bailey, G.W. Abiotic redox transformation of organic compounds at the clay-water interface. Presented at: Bouyoucos Conference on Environmental Chemistry at the Clay-Water Interface, Honolulu, HI, March 6-9, 2000. 3/6/2000

**Contact:** George W. Bailey

Sawunyama, P., and Bailey, G.W. A quantum mechanical study of the protonation and covalent hydration of quinazoline in the presence of metal cations. Presented at: 220th American Chemical Society National Meeting, Washington, DC, August 20-24, 2000. 8/20/2000

**Contact:** George W. Bailey

Sawunyama, P., and Bailey, G.W. Modeling the interaction of agrochemicals with environmental surfaces. Presented at: 219th American Chemical Society National Meeting, San Francisco, CA, March 26-30, 2000. 3/26/2000

**Contact:** George W. Bailey

Susarla, S., Wood, G., Wolfe, N.L., and McCutcheon, S.C. Adsorption characteristics of perchlorate in soils. Presented at: Association for Environmental Health and Sciences 10th Annual West Coast Conference on Contaminated Soils and Ground Water, Port Hueneme, CA, March 20-23, 2000. 3/20/2000

**Contact:** Steve C. McCutcheon

Garrison, A.W. Applications of capillary electrophoresis to the study of chiral environmental pollutants: enantiomer separation and measurements of enantioselectivity. Presented at: EnviroAnalysis 2000, Ottawa, Canada, May 8-11, 2000. 5/8/2000

**Contact:** A. Wayne Garrison

Ravichandran, M., Araujo, R., and Zepp, R.G. Role of humic substances on the photochemical reduction of mercury. Presented at: 220th American Chemical Society National Meeting, Washington, DC, August 20-24, 2000. 8/20/2000

**Contact:** Rochelle Araujo

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2000 - Dec 31, 2000**

***Presented Published***

Pinto, A., Varella, R., Nardoto, G., Viana, L., Andrade, L., Chiba, R., Santos, R., Bustamante, M., Burke, Jr., R.A., Kisselle, K., Molina, M., and Zepp, R.G. Interactions of nutrient and carbon cycles and trace gas exchange with land use change and fire in the Cerrado of Central Brazil. Presented at: American Geophysical Union Meeting, San Francisco, CA, December 15-20, 2000.

12/15/2000

***Contact:*** Roger A. Burke

Pinto, A., Varella, R., Nardoto, G., Viana, L., Andrade, L., Chiba, R., Santos, R., Bustamante, M., Burke, Jr., R.A., Molina, M., Zepp, R.G., Kisselle, K., and Opsahl, S.P. Impacts of land use change and fire on nutrient and carbon cycles and trace gas exchange in soils of the Cerrado in central Brazil. Presented at: First Large Scale Biosphere-Atmospheric Experiment in Amazonia (LBA) Scientific Conference, Belem, Brazil, June 26-30, 2000.

6/26/2000

***Contact:*** Roger A. Burke

Bird, S.L., Alberty, S.W., and Exum, L.R. Impervious cover as a regional indicator. Presented at: US Environmental Protection Agency Regional Vulnerability Assessment Workshop, Research Triangle Park, NC, September 12-14, 2000.

9/12/2000

***Contact:*** Sandra L. Bird

Rashleigh, B., and Grossman, G. An individual-based model of Cottus population dynamics. Presented at: Ethology, Evolutionary, Ecology of Fishes Meeting, Athens, GA, May 20-24, 2000.

5/20/2000

***Contact:*** Brenda Rashleigh

Molina, M., Burke, Jr., R.A., and Cox, J.E. Effect of temperature on the C isotopic value of microbial lipids applied to determine C usage in microbial communities. Presented at: American Society for Microbiology Annual Meeting, Los Angeles, CA, May 21-25, 2000.

5/21/2000

***Contact:*** Marirosa Molina

Loux, N.T. The role of temperature disequilibrium in monitoring low volatility contaminant migration. Presented at: Fourth International Symposium of Elements in Biological, Environmental and Toxicological Sciences, Whistler, Canada, June 25-July 1, 2000.

6/25/2000

***Contact:*** Nicholas T. Loux

Loux, N.T. Variable bound-site charging contributions to surface complexation mass action expressions. Presented at: 219th American Chemical Society National Meeting, San Francisco, CA, March 26-30, 2000.

3/26/2000

***Contact:*** Nicholas T. Loux

Kraemer, S.R., Hayter, E.J., and Cyterski, M.J. Testing linkages between groundwater, watershed, and in-stream models in the Contentnea Creek basin, North Carolina, USA. Presented at: 2000 Annual Meeting and International Conference of the American Institute of Hydrology, Research Triangle Park, NC, November 5-8, 2000.

11/5/2000

***Contact:*** Stephen R. Kraemer

Weaver, J.W. Transport. Presented at: US Environmental Protection Agency Methyl Tert-Butyl Ether (MTBE) Scientist-to-Scientist Meeting, Chicago, IL, June 20-21, 2000.

6/20/2000

***Contact:*** James W. Weaver

Washington, J.W. The near-equilibrium of microbially mediated redox couples in reducing groundwater environments. Presented at: 220th American Chemical Society National Meeting, Washington, DC, August 20-24, 2000.

8/20/2000

***Contact:*** John Washington

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2000 - Dec 31, 2000**

***Presented Published***

Frick, W.E., Baumgartner, D.J., Davis, L.R., Lung, W.S., and Roberts, P.J.W. Modeling consistency, model quality, and fostering continued improvement. Presented at: International Conference of Marine Waste Water Discharges 2000, Genova, Italy, November 27-30, 2000.

11/28/2000

**Contact:** Walter E. Frick

Richardson, S.D. Identification of new disinfection by-products in drinking water. Presented at: Southeast/Southwest American Chemical Society Regional Meeting, New Orleans, LA, December 6-8, 2000.

12/6/2000

**Contact:** Susan D. Richardson

Richardson, S.D., Thruston, Jr., A.D., Rav-Acha, C., and Glezer, V. Identification of chlorine dioxide and chloramine drinking water disinfection by-products. Presented at: International Society of Exposure Analysis Conference, Monterey, CA, October 24-27, 2000.

10/24/2000

**Contact:** Susan D. Richardson

Tebes-Stevens, C.L., and Jones, W.J. QSAR analysis of sorption-corrected rate constants for reductive biotransformation of halogenated aromatics. Presented at: 220th American Chemical Society National Meeting, Washington, DC, August 20-24, 2000.

8/20/2000

**Contact:** Caroline Stevens

Pastor, S.J., Krasner, S.W., Weinberg, H., and Richardson, S.D. Investigation of disinfection by-products in drinking water using solid-phase extraction and gas chromatography/mass spectrometry. Presented at: 48th American Society for Mass Spectrometry Conference, Long Beach, CA, June 11-15, 2000.

6/11/2000

**Contact:** Susan D. Richardson

Richardson, S.D., Thruston, Jr., A.D., Rav-Acha, C., and Glezer, V. Identification of chlorine dioxide drinking water disinfection by-products formed at high bromide levels. Presented at: 48th American Society for Mass Spectrometry Conference, Long Beach, CA, June 11-15, 2000.

6/11/2000

**Contact:** Susan D. Richardson

Hamilton, J.A., Kraemer, S.R., Ryan, W.J., Melgin, W., Schroer, K.L., Long, D., and Chesney, C. Ground water and watersheds and environmental protection. Presented at: American Geophysical Union Meeting, Washington, DC, May 30-June 2, 2000.

5/30/2000

**Contact:** Stephen R. Kraemer

Weaver, J.W., and Small, M. Models and methods for petroleum hydrocarbon risk assessment: OnSite, LUSTRisk, and HSSM. Presented at: 12th National Underground Storage Tank Conference, Portland, OR, March 21-23, 2000.

3/21/2000

**Contact:** James W. Weaver

Weaver, J.W. The on-site on-line tool for site assessment calculations. Presented at: Georgia Ground Water Association Meeting, Doraville, GA, March 10, 2000.

3/10/2000

**Contact:** James W. Weaver

Richardson, S.D. Techniques for analyzing complex mixtures of drinking water DBPs. Presented at: Analytica Conference 2000, Munich, Germany, April 11-14, 2000.

4/11/2000

**Contact:** Susan D. Richardson

Frick, W.E., Emerman, S., and Sigleo, A.C. Bathymetric irregularities, jet formation, and subsequent mixing processes. Presented at: American Geophysical Union Ocean Sciences Meeting, San Antonio, TX, January 24-29, 2000.

1/24/2000

**Contact:** Walter E. Frick

# NERL/ERD Publications

Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)

Jan 1, 2000 - Dec 31, 2000

*Presented Published*

Gonzalez, A.C., Krasner, S.W., Weinberg, H., and Richardson, S.D. Solid phase microextraction for trace level analysis of disinfection by-products. Presented at: 48th American Society for Mass Spectrometry Conference, Long Beach, CA, June 11-15, 2000. 6/11/2000

**Contact:** Susan D. Richardson

Thruston, Jr., A.D., Richardson, S.D., Rav-Acha, C., and Glezer, V. Survey of halonitromethanes and iodomethanes: disinfection by-products in drinking water. Presented at: 48th American Society for Mass Spectrometry Conference, Long Beach, CA, June 11-15, 2000. 6/11/2000

**Contact:** Alfred D. Thruston

Weaver, J.W. Observations from contaminant plumes on Long Island. Presented at: American Geophysical Union Fall Meeting, San Francisco, CA, December 15-19, 2000. 12/15/2000

**Contact:** James W. Weaver

Richardson, S.D. Drinking water disinfection by-products: what is known. Presented at: International Workshop on Exposure Assessment for Disinfection By-Products in Epidemiologic Studies, Ottawa, Canada, May 7-10, 2000. 5/7/2000

**Contact:** Susan D. Richardson

Weaver, J.W., Haas, J.E., and Sosik, C.B. Comparative evaluation of MTBE sites on Long Island. Presented at: US Environmental Protection Agency Methyl Tert-Butyl Ether (MTBE) Biodegradation Workshop, Cincinnati, OH, February 1-3, 2000. 2/2/2000

**Contact:** James W. Weaver

## BOOK CHAPTER

Moran, M.A., and Zepp, R.G. "UV radiation effects on microbes and microbial processes." In: Microbial Ecology of the Oceans, Chapter 7 D.L. Kirchman (Ed.), New York, NY: John Wiley & Sons, Inc. 2000, 201-228. EPA/600/A-03/033. 4/1/2000

**Contact:** Richard G. Zepp

Garrison, A.W. "Analysis of chiral pesticides and polychlorinated biphenyl congeners in environmental samples." In: Encyclopedia of Analytical Chemistry R.A. Myers (Ed.), Chichester, England: John Wiley & Sons, Ltd. 2000, 6147-6158. EPA/600/A-03/037. 11/1/2000

**Contact:** A. Wayne Garrison

Wolfe, N.L., and Jeffers, P.M. "Hydrolysis." In: Handbook of Property Estimation Methods for Chemicals: Environmental and Health Sciences, Chapter 13 R.S. Boethling and D. Mackay (Ed.), Boca Raton, FL: Lewis Publishers 2000, 311-333. EPA/600/A-03/034. 7/1/2000

**Contact:** N. Lee Wolfe

Richardson, S.D., Thruston, Jr., A.D., Caughran, T.V., Chen, P.H., Collette, T.W., Floyd, T.L., Schenck, K.M., and Lykins, Jr., B.W. "Identification of new drinking water disinfection by-products formed in the presence of bromide." In: Natural Organic Matter and Disinfection By-Products Characterization and Control in Drinking Water, Chapter 26 Barrett, S.E., Krasner, S.W., and Amy, G.L. (Ed.), Washington, DC: American Chemical Society 2000, 389-402. EPA/600/A-03/026. 7/1/2000

**Contact:** Susan D. Richardson

Richardson, S.D., Caughran, T.V., Crumley, F.G., Poiger, T., and Guo, Y. "Identification of polar drinking water disinfection by-products using liquid chromatography - mass spectrometry." In: Natural Organic Matter and Disinfection By-Products Characterization and Control in Drinking Water, Chapter 25 Washington, DC: American Chemical Society 2000, 374-388. EPA/600/A-03/027. 7/1/2000

**Contact:** Susan D. Richardson



# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 2000 - Dec 31, 2000**

***Presented Published***

## ***EPA PROCEED***

Thurston, R.V. Fish Physiology, Toxicology, and Water Quality. Proceedings of the Fifth International Symposium, Kowloon, Hong Kong, November 10-13, 1998. 2000. EPA/600/R-00/015 (NTIS PB2000-107439). 11/10/1998 4/15/2000

***Contact:*** George W. Bailey

## ***JOURNAL***

Erickson, D.J., Zepp, R.G., and Atlas, E. Ozone depletion and the air-sea exchange of greenhouse and chemically reactive trace gases. Chemosphere - Global Change Science 2 (2):137-149 (2000). EPA/600/J-02/161. 4/1/2000

***Contact:*** Richard G. Zepp

Moran, M.A., Sheldon, W., and Zepp, R.G. Carbon loss and optical property changes during long-term photochemical and biological degradation of estuarine dissolved organic matter. Limnology and Oceanography 45 (6):1254-1264 (2000). EPA/600/J-02/170. 9/1/2000

***Contact:*** Richard G. Zepp

Arnold, J.W., and Bailey, G.W. Surface finishes on stainless steel reduce bacterial attachment and early biofilm formation: scanning electron and atomic force microscopy study. Poultry Science 79 (12):1839-1845 (2000). EPA/600/J-03/070. 12/1/2000

***Contact:*** George W. Bailey

Ellington, J.J., and Evans, J.J. Determination of perchlorate at parts-per-billion levels in plants by ion chromatography. Journal of Chromatography A 898 (2):193-199 (2000). EPA/600/J-02/163. 11/17/2000

***Contact:*** J. Jackson Ellington

Simon, R., Colon, D., Tebes-Stevens, C.L., and Weber, E.J. Effect of redox zonation on the reductive transformation of p-cyanonitrobenzene in a laboratory sediment column. Environmental Science & Technology 34 (17):3617-3622 (2000). EPA/600/J-02/160. 9/1/2000

***Contact:*** Eric J. Weber

Susarla, S., Harvey, G., McCutcheon, S.C., and Bacchus, S.T. Phytotransformations of perchlorate contaminated waters. Environmental Technology 21 (9):1055-1065 (2000). 9/1/2000

***Contact:*** Steve C. McCutcheon

Winget, P., Weber, E.J., Cramer, C.J., and Truhlar, D.G. Computational electrochemistry: aqueous one-electron oxidation potentials for substituted anilines. Physical Chemistry Chemical Physics 2 (6):1231-1239 (2000). EPA/600/J-02/166. 3/1/2000

***Contact:*** Eric J. Weber

Medina, V.F., Larson, S.L., Bergstedt, A.E., and McCutcheon, S.C. Phyto-removal of trinitrotoluene from water with batch kinetic studies. Water Research 34 (10):2713-2722 (2000). EPA/600/J-02/140. 7/1/2000

***Contact:*** Steve C. McCutcheon

Gao, J., Garrison, A.W., Mazur, C.S., Wolfe, N.L., and Hoehamer, C. Uptake and phytotransformation of o,p'-DDT and p,p'-DDT by axenically cultivated aquatic plants. Journal of Agricultural and Food Chemistry 48 (12):6121-6127 (2000). EPA/600/J-02/167. 12/15/2000

***Contact:*** A. Wayne Garrison

# NERL/ERD Publications

Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)

Jan 1, 2000 - Dec 31, 2000

*Presented Published*

- Gao, J., Garrison, A.W., Mazur, C.S., Wolfe, N.L., and Hoehamer, C. Uptake and phytotransformation of organophosphorus pesticides by axenically cultivated aquatic plants. *Journal of Agricultural and Food Chemistry* 48 (12):6114-6120 (2000). EPA/600/J-02/168. 12/15/2000  
**Contact:** A. Wayne Garrison
- Garrison, A.W., Nzengung, V., Avants, J., Ellington, J.J., Jones, W.J., Rennels, D., and Wolfe, N.L. Phytodegradation of p,p'-DDT and the enantiomers of o,p'-DDT. *Environmental Science* 34 (9):1663-1670 (2000). EPA/600/J-02/155. 5/1/2000  
**Contact:** A. Wayne Garrison
- Johnston, J.M., Novak, J.H., and Kraemer, S.R. Multimedia integrated modeling for environmental protection: introduction to a collaborative framework. *Environmental Monitoring and Assessment* 63 (1):253-263 (2000). EPA/600/J-02/154. 7/1/2000  
**Contact:** John M. Johnston
- Johnston, J.M. The contribution of microarthropods to above ground food webs: a review and model of below ground transfer in a coniferous forest. *American Midland Naturalist* 143 (1):226-238 (2000). EPA/600/J-02/153. 1/31/2000  
**Contact:** John M. Johnston
- Loux, N.T. Diel temperature effects on the exchange of elemental mercury between the atmosphere and underlying waters. *Environmental Toxicology and Chemistry* 19 (4):1191-1198 (2000). EPA/600/J-02/151. 4/1/2000  
**Contact:** Nicholas T. Loux
- Poiger, T., Richardson, S.D., and Baughman, G.L. Analysis of anionic metallized azo and formazan dyes by capillary electrophoresis/mass spectrometry. *Journal of Chromatography A* 886 (1-2):259-270 (2000). EPA/600/J-02/159. 7/21/2000  
**Contact:** Susan D. Richardson
- Poiger, T., Richardson, S.D., and Baughman, G.L. Identification of reactive dyes in spent dyebaths and wastewater by capillary electrophoresis/mass spectrometry. *Journal of Chromatography A* 886 (1-2):271-282 (2000). EPA/600/J-02/158. 7/21/2000  
**Contact:** Susan D. Richardson
- Richardson, S.D., Caughran, T.V., Poiger, T., Guo, Y., and Crumley, F.G. Application of DNPH derivatization with LC/MS to the identification of polar carbonyl drinking water disinfection by-products in drinking water. *Ozone: Science & Engineering* 22 (6):653-675 (2000). EPA/600/J-02/165. 12/31/2000  
**Contact:** Susan D. Richardson
- Richardson, S.D., Thruston, Jr., A.D., Caughran, T.V., Chen, P.H., Collette, T.W., Schenck, K.M., Lykins, Jr., B.W., Rav-Acha, C., and Glezer, V. Identification of drinking water disinfection by-products from ozone, chlorine dioxide, chloramine, and chlorine. *Water, Air, and Soil Pollution* 123 (1-4):95-102 (2000). EPA/600/J-02/152. 11/30/2000  
**Contact:** Susan D. Richardson
- Washington, J.W. The possible role of volcanic aquifers in prebiologic genesis of organic compounds and RNA. *Origins of Life and Evolution of the Biosphere* 30 (1):53-79 (2000). EPA/600/J-02/169. 2/1/2000  
**Contact:** John Washington

# ***NERL/ERD Publications***

***Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)***

**Jan 1, 2000 - Dec 31, 2000**

***Presented Published***

Richardson, S.D. Environmental mass spectrometry. Analytical Chemistry 72 (18):4477-4496 (2000). EPA/600/J-02/162.

9/15/2000

***Contact:*** Susan D. Richardson

## ***RESEARCH RPT***

Lee, L.S., Jafvert, C.T., Li, H., and Fabrega-Duque, J.R. Modeling soil-water distribution of aromatic amines in water saturated soil systems. 2000. EPA/600/S-99/005 (NTIS PB2001-101636).

4/1/2000

***Contact:*** A. Wayne Garrison

## ***SYMPOS/CONF***

Gonzalez, A.C., Krasner, S.W., Weinberg, H.S., and Richardson, S.D. Determination of newly identified disinfection by-products in drinking water. Presented at: American Water Works Association Water Quality Technical Conference, Salt Lake City, UT, November 5-9, 2000. EPA/600/A-03/029.

11/5/2000

***Contact:*** Susan D. Richardson

Onstad, G.D., Weinberg, H.S., and Richardson, S.D. Evolution of an analytical method for halogenated furanones in drinking water. Presented at: American Water Works Association Water Quality Technical Conference, Salt Lake City, UT, November 5-9, 2000. EPA/600/A-03/030.

11/5/2000

***Contact:*** Susan D. Richardson

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 1999 - Dec 31, 1999**

***Presented Published***

## ***ABSTRACT/ORAL***

Zepp, R.G., Moran, M.A., and Sheldon, W. Changes in spectral and photochemical properties of colored dissolved organic matter in a coastal estuary. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

***Contact:*** Richard G. Zepp

Zepp, R.G. New approaches to estimating indirect photolysis rates in aquatic environments. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

***Contact:*** Richard G. Zepp

Simon, R., and Weber, E.J. The reductive transformation of perchlorate in a fresh water sediment: laboratory batch studies. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

***Contact:*** Eric J. Weber

Saleem, Z.A., Ambrose, Jr., R.B., Schwede, D.B., Little, K.L., Guvanasen, D., and Lillys, T.P. Simulating integrated multimedia chemical fate and transport for national risk assessments. Presented at: Society for Risk Analysis Symposium, Atlanta, GA, December 5-8, 1999. 12/5/1999

***Contact:*** Robert B. Ambrose

Susarla, S., Wolfe, N.L., Garrison, A.W., and McCutcheon, S.C. Perchlorate identification in fertilizers and accumulation in lettuce seedlings. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

***Contact:*** Steve C. McCutcheon

Susarla, S., Wood, G., Wolfe, N.L., and McCutcheon, S.C. Adsorption characteristics of perchlorate in soils. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

***Contact:*** Steve C. McCutcheon

Williams, T.L., and Collette, T.W. Raman spectral analysis of perchlorate contamination in commonly-used fertilizers. Presented at: Federation of Analytical Chemistry and Spectroscopy Societies Conference, Vancouver, Canada, October 23-29, 1999. 10/23/1999

***Contact:*** Timothy W. Collette

Collette, T.W., and Williams, T.L. Optimization of modern dispersive Raman spectrometers for molecular speciation of organics in water. Presented at: Federation of Analytical Chemistry and Spectroscopy Societies Conference, Vancouver, Canada, October 23-29, 1999. 10/23/1999

***Contact:*** Timothy W. Collette

Mack, E.E., Beck, J.W., Mazur, C.S., and Jones, W.J. Environmental characteristics affecting reductive transformation of organic pollutants in anoxic sediments. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

***Contact:*** William Jack Jones

Wiese, T.E., Garrison, A.W., Nehls, S., and Bishop, T.C. Selective in vitro hormone activity of o,p'-DDT and o,p'-methoxychlor optical isomers. Presented at: 218th American Chemical Society National Meeting, New Orleans, LA, August 22-26, 1999. 8/22/1999

***Contact:*** A. Wayne Garrison

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 1999 - Dec 31, 1999**

***Presented Published***

Bacchus, S.T., Susarla, S., Wolfe, N.L., Harvey, G., and McCutcheon, S.C. Predicting field performance of herbaceous species for phytoremediation of perchlorate. Presented at: 218th American Chemical Society National Meeting, New Orleans, LA, August 22-26, 1999. 8/19/1999

***Contact:*** Steve C. McCutcheon

Bailey, G.W., and Yan, L. Electron transfer mechanism at the solid-liquid interface of phyllosilicates. Presented at: Clays and Clay Minerals Meeting, West Lafayette, IN, June 27-July 1, 1999. 6/27/1999

***Contact:*** George W. Bailey

Simon, R., and Weber, E.J. The reductive transformation of perchlorate in a fresh water sediment: laboratory batch studies. Presented at: 5th International Symposium on In Situ and On-Site Bioremediation, San Diego, CA, April 19-22, 1999. 4/19/1999

***Contact:*** Eric J. Weber

Mack, E.E., Beck, J.W., and Jones, W.J. Biotic and abiotic contributions to reductive transformation of organic pollutants. Presented at: 5th International Symposium on In Situ and On-Site Bioremediation, San Diego, CA, April 19-22, 1999. 4/19/1999

***Contact:*** William Jack Jones

Garrison, A.W. Chiral chemistry of pesticides in the environment with implications for pollution prevention. Presented at: 3rd Annual Green Chemistry and Engineering Conference, Washington, DC, June 29-July 1, 1999. 6/29/1999

***Contact:*** A. Wayne Garrison

Susarla, S., Bacchus, S.T., and McCutcheon, S.C. Perchlorate uptake and transformation in aquatic plants. Presented at: 15th Annual International Conference on Contaminated Sediments, Soils and Water, Amherst, MA, October 12-14, 1999. 10/12/1999

***Contact:*** Steve C. McCutcheon

Shira, B.A., Kenneke, J.F., and Weber, E.J. Reductive Dechlorination of Polyhalogenated Hydrocarbons in Model Systems. 9th Annual Meeting of SETAC-Europe, Leipzig, Germany, May 25-29, 1999. 5/25/1999

***Contact:*** Eric J. Weber

Bacchus, S.T., Susarla, S., and McCutcheon, S.C. Application of Vascular Plants for Bioremediation of Perchlorate: Unraveling the Mysteries. Presented at: 5th International Symposium on In-Situ and On-Site Bioremediation, San Diego, CA, April 19-22, 1999. 4/19/1999

***Contact:*** Steve C. McCutcheon

Kenneke, J.F., and McCutcheon, S.C. A Long-Term Laboratory and Field Investigation on the Degradation of PCE with Zero-Valent Iron. Geological Society of America, Southeastern Section Meeting, Athens, GA, March 25-26, 1999. 3/25/1999

***Contact:*** John Kenneke

Bacchus, S.T., Susarla, S., and McCutcheon, S.C. Advantages of a Multidisciplinary Approach to In Situ Phytoremediation. Presented at: Georgia Water Resources Conference, Athens, GA, March 29-31, 1999. 3/29/1999

***Contact:*** Steve C. McCutcheon

Simon, R., Colon, D., and Weber, E.J. Effect of DOM and Redox Zonation on the Reductive Transformation of Nitroaromatics: Batch and Laboratory Column Studies. 9th Annual Meeting of SETAC-Europe, Leipzig, Germany, May 25-29, 1999. 5/25/1999

***Contact:*** Eric J. Weber

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 1999 - Dec 31, 1999**

***Presented Published***

Tsiros, I.X., Ambrose, Jr., R.B., and Chronopoulou-Sereli, A. Air-Vegetation-Soil Partitioning of Toxic Chemicals in Environmental Simulation Modeling. 6th International Conference on Environmental Science and Technology, Samos, Greece, Aug. 31 - Sept. 2, 1999. 8/31/1999

**Contact:** Robert B. Ambrose

Wiese, T.E., and Garrison, A.W. Selective Estrogen Activity of o,p'-DDT and o,p'-DDD Enantiomers. Annual Meeting of the Society of Toxicology, New Orleans, LA, March 14-18, 3/14/1999

**Contact:** A. Wayne Garrison

Gao, J., Garrison, A.W., Hoehamer, C., and Wolfe, N.L. Biotransformation of Organophosphorus Pesticides and DDT Using Axenic Plant Tissue Cultures. 5th International Symposium on In Situ and On-Site Bioremediation, San Diego, CA, April 19-22, 1999. 4/19/1999

**Contact:** A. Wayne Garrison

Tsiros, I.X., Ambrose, Jr., R.B., and Laniak, G.F. Simulation models for environmental multimedia analysis of toxic chemicals. Presented at: 3rd International Conference on Environmental Technology, Thessaloniki, Greece, June 3-6, 1999. 6/3/1999

**Contact:** Robert B. Ambrose

Wolfe, N.L., Collette, T.W., Garrison, A.W., Susarla, S., and Teng, Q. Alternative techniques for measurement of perchlorate in fertilizer and environmental samples. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

**Contact:** N. Lee Wolfe

Garrison, A.W. An overview of chiral chemistry in the environment. Presented at: 218th American Chemical Society National Meeting, New Orleans, LA, August 22-26, 1999. 8/22/1999

**Contact:** A. Wayne Garrison

Garrison, A.W., Wong, C.S., Pakdeesusuk, U., Lee, C.M., Coates, J.T., and Elzerman, A.W. Enantiomeric ratios of chiral PCB atropisomers in radiodated sediment cores. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

**Contact:** A. Wayne Garrison

Long, J.M., Karickhoff, S.W., Weber, E.J., and Jones, W.J. SPARC generated chemical properties database for use in national risk assessments. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

**Contact:** J. MacArthur Long

Yan, L., and Bailey, G.W. Using molecular probes to study interfacial redox reaction at Fe-bearing smectites. Presented at: Soil Science Society of America Annual Meeting, Salt Lake City, UT, November 1-4, 1999. 10/31/1999

**Contact:** George W. Bailey

Chen, Y.D., McCutcheon, S.C., Nutter, W.L., and Carousel, R.F. Hydrologic and stream temperature modeling for anadromous fish habitat restoration in a wildland watershed. Presented at: American Water Resources Association Annual Summer Specialty Conference on Wildland Hydrology, Bozeman, MT, June 30-July 2, 1999. 6/30/1999

**Contact:** Steve C. McCutcheon

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 1999 - Dec 31, 1999**

***Presented Published***

Ellington, J.J., Evans, J.J., and Cook, S.C. Enzyme degradation of chiral organic phosphorus insecticides. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

***Contact:*** J. Jackson Ellington

Ellington, J.J., and Evans, J.J. Occurrence of perchlorate anion in plant organs: method development and results of analysis of selected plants. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/15/1999

***Contact:*** J. Jackson Ellington

Ambrose, Jr., R.B., and Burns, L.A. Application of EXAMS as the surface water module in the HWIR multimedia risk assessment system. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/19/1999

***Contact:*** Robert B. Ambrose

Lewis, D.L., and Garrison, A.W. Global effects of various soil treatments on transformations of chiral pesticides. Presented at: 20th Annual Society of Environmental Toxicology and Chemistry Meeting, Philadelphia, PA, November 14-18, 1999. 11/14/1999

***Contact:*** A. Wayne Garrison

Simon, R., and Weber, E.J. The reductive transformation of perchlorate in a fresh water sediment: laboratory batch studies.. Presented at: 218th American Chemical Society National Meeting, New Orleans, LA, August 22-26, 1999. 8/20/1999

***Contact:*** Eric J. Weber

McCutcheon, S.C., and Pendergast, J. Overview of total maximum daily load (TMDL) problem and supporting model development. Presented at: Appalachian Rivers II Conference, Morgantown, WV, July 27-29, 1999. 7/27/1999

***Contact:*** Steve C. McCutcheon

Loux, N.T. Issues in assessing low level ionizable contaminant partitioning in soils and sediments. Presented at: Society for Risk Analysis Symposium, Atlanta, GA, December 5-8, 1999. 12/5/1999

***Contact:*** Nicholas T. Loux

Burns, L.A. Modelling of agrichemicals in environmental compartments - concepts, problems, and solutions. Presented at: XIVth International Plant Protection Congress, Jerusalem, Israel, July 25-30, 1999. 7/25/1999

***Contact:*** Lawrence A. Burns

Kastner, J.R., Santo Domingo, J., Denham, M., Molina, M., and Brigmon, R. Effect of Fenton's reagent on subsurface microbiology and biodegradation capacity. Presented at: 5th International Symposium on In Situ and On-Site Bioremediation, San Diego, CA, April 19-22, 1999. 4/19/1999

***Contact:*** Marirosa Molina

Burke, Jr., R.A., Molina, M., Cox, J.E., and Osher, L.J. Use of the composition and stable carbon isotope ratio of microbial fatty acids to study carbon cycling. Presented at: Southeastern Section of the Geological Society of America Symposium, Athens, GA, March 24-26, 1999. 3/24/1999

***Contact:*** Roger A. Burke

Loux, N.T. Charging Contributions to Bound-Site Activity Coefficients with the Entropic Balanced Surface Potential Model. Abstract presented at: American Chemical Society, Anaheim, CA, March 21-24, 1999. 3/21/1999

***Contact:*** Nicholas T. Loux

# ***NERL/ERD Publications***

***Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)***

**Jan 1, 1999 - Dec 31, 1999**

***Presented Published***

Johnston, J.M. A scientific and technological framework for environmental decision making. 10/5/1999  
Presented at: North Atlantic Treaty Organization Advanced Research Workgroup, Sofia, Bulgaria, October 5-9, 1999.

***Contact:*** John M. Johnston

Burke, Jr., R.A., Molina, M., and Cox, J.E. Use of stable carbon isotope ratios of fatty acids to 10/31/1999  
evaluate microbial carbon sources in terrestrial environments. Presented at: Soil Science Society of America Annual Meeting, Salt Lake City, UT, November 1-4, 1999.

***Contact:*** Roger A. Burke

Burke, Jr., R.A. Use of the composition and stable carbon isotope ratio of microbial fatty acids to 9/16/1999  
study carbon cycling. Presented at: Centro de Energia Nuclear na Agricultura (CENA), Sao Paulo, Brazil, September 16, 1999.

***Contact:*** Roger A. Burke

Rashleigh, B., and Hampson, P. Relation of landscape-scale environmental characteristics to 9/1/1999  
fish assemblages in the upper French Broad River Basin, North Carolina. Presented at: American Fisheries Society Annual Meeting, Charlotte, NC, September 1, 1999.

***Contact:*** Brenda Rashleigh

Frick, W.E., Phelps, H., Sigleo, A.C., and Barber, M.C. Naturalist's application of a promising 12/26/1999  
turbulence model. Presented at: 80th Western Society of Naturalists Annual Meeting, Monterey, CA, December 26-30, 1999.

***Contact:*** Walter E. Frick

Hayter, E.J. Prediction of contaminated sediment transport in the Maurice River-Union Lake, New 6/28/1999  
Jersey, USA. Presented at: United Nations Educational, Scientific and Educational Organization Meeting "A Sediment Transport Model of the Inner Channels of Venice", Venice, Italy, June 28-29, 1999.

***Contact:*** Earl Hayter

Frick, W.E. Individual turbulent cell interaction: basis for boundary layer establishment. 9/25/1999  
Presented at: Estuarine Research Federation 15th Biennial Conference, New Orleans, LA, September 25-30, 1999.

***Contact:*** Walter E. Frick

Richardson, S.D. Identification of new drinking water disinfection by-products from ozone, 6/13/1999  
chlorine dioxide, chloramine, and chlorine. Presented at: 7th International Conference of the Israel Society for Ecology and Environmental Quality, Tel Aviv, Israel, June 13-18, 1999.

***Contact:*** Susan D. Richardson

Richardson, S.D., Caughran, T.V., Poiger, T., Guo, Y., and Crumley, F.G. Identification of polar 3/21/1999  
drinking water disinfection by-products using LC/MS. Presented at: 217th American Chemical Society National Meeting, Anaheim, CA, March 21-25, 1999.

***Contact:*** Susan D. Richardson

Richardson, S.D., Caughran, T.V., Guo, Y., Crumley, F.G., and Poiger, T. Identification of Polar 3/29/1999  
Drinking Water Disinfection By-products with LC/MS. Abstract presented at: Georgia Water Resources Conference, Athens, GA, March 29-31, 1999.

***Contact:*** Susan D. Richardson



# NERL/ERD Publications

Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)

Jan 1, 1999 - Dec 31, 1999

*Presented Published*

Richardson, S.D., Caughran, T.V., Guo, Y., Crumley, F.G., and Poiger, T. Identification of polar drinking water disinfection By-products Using LC/MS. American Chemical Society, Anaheim, CA, March 21-24, 1999. 3/21/1999

**Contact:** Susan D. Richardson

Kraemer, S.R., Johnston, J.M., and Colarullo, S.J. Investigation of Subsurface Residence Times in the Shallow Coastal Plain Aquifer Beneath Locust Grove, Maryland. ModelCARE'99, Zurich, Switzerland, September 20-23, 1999. 9/20/1999

**Contact:** Stephen R. Kraemer

Keyes, J.M.H., Frick, W.E., and Dufour, A.P. A case study using the EPA's water quality modeling system, the Windows Interface for Simulating Plumes (WISP). Presented at: 19th Annual American Geophysical Union Hydrology Days, Fort Collins, CO, August 16-20, 1999. 8/16/1999

**Contact:** Walter E. Frick

Frick, W.E., and Keyes, J.M.H. Questioning the mach number criterion or why turbulent flow is compressible flow. Presented at: 19th Annual American Geophysical Union Hydrology Days, Fort Collins, CO, August 16-20, 1999. 8/16/1999

**Contact:** Walter E. Frick

## BOOK CHAPTER

French, R.H., McCutcheon, S.C., and Martin, J.L. "Environmental hydraulics." In: Hydraulic Design Handbook, Chapter 5 L. Mays (Ed.), New York, NY: McGraw-Hill Professional 1999, 5.1-5.33. EPA/600/A-03/028. 7/29/1999

**Contact:** Steve C. McCutcheon

## JOURNAL

Kuhlbusch, T.A., and Zepp, R.G. Carbon trace gases in lake and beaver pond ice near Thompson, Manitoba, Canada. Journal of Geophysical Research 104 (D22):27693-27698 (1999). EPA/600/J-02/150. 11/27/1999

**Contact:** Richard G. Zepp

Smolen, J.M., Weber, E.J., and Tratnyek, P.G. Molecular probe techniques for the identification of reductants in sediments: evidence for reduction of 2-chloroacetophenone by hydride transfer. Environmental Science & Technology 33 (3):440-445 (1999). EPA/600/J-02/197. 2/1/1999

**Contact:** Eric J. Weber

Shevchenko, S.M., Bailey, G.W., and Akim, L.G. The conformational dynamics of humic polyanions in model organic and organo-mineral aggregates. Journal of Molecular Structure (Theochem) 460 (1-3):179-190 (1999). EPA/600/J-02/192. 2/26/1999

**Contact:** George W. Bailey

Sabaliunas, D., Ellington, J.J., and Sabaliuniene, I. Screening bioavailable hydrophobic toxicants in surface waters with semipermeable membrane devices: role of inherent oleic acid in toxicity evaluations. Ecotoxicology and Environmental Safety 44 (2):160-167 (1999). EPA/600/J-02/147. 10/19/1999

**Contact:** J. Jackson Ellington

Elovitz, M.S., and Weber, E.J. Sediment-mediated reduction of 2,4,6-trinitrotoluene and sorption of the resulting reaction products. Environmental Science & Technology 33 (15):2617-2625 (1999). EPA/600/J-99/238. 8/1/1999

**Contact:** Eric J. Weber

# NERL/ERD Publications

Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)

Jan 1, 1999 - Dec 31, 1999

*Presented Published*

- Ellington, J.J. Octanol/Water partition coefficients and water solubilities of phthalate esters. *Journal of Chemical and Engineering Data* 44 (6):1414-1418 (1999). EPA/600/J-02/146. 11/19/1999  
**Contact:** J. Jackson Ellington
- Susarla, S., Bacchus, S.T., Wolfe, N.L., and McCutcheon, S.C. Phytotransformation of perchlorate and identification of metabolic products in *Myriophyllum aquaticum*. *International Journal of Phytoremediation* 1 (1):97-107 (1999). EPA/600/J-02/141. 2/1/1999  
**Contact:** N. Lee Wolfe
- Bouchard, D.C. Sorption of vinclozolin and atrazine on four geosorbents. *Pesticide Science* 55 (11):1095-1102 (1999). EPA/600/J-02/142. 11/19/1999  
**Contact:** Dermont C. Bouchard
- Ananyeva, N.D., Demkina, T.S., Jones, W.J., Cabrera, M.L., and Steen, W.C. Microbial biomass in soils of Russia under long-term management practices. *Biology and Fertility of Soils* 29 (3):291-299 (1999). EPA/600/J-02/149. 9/9/1999  
**Contact:** William Jack Jones
- Tsiros, I.X., and Ambrose, Jr., R.B. An Environmental Simulation Model for Transport and Fate of Mercury in Small Rural Catchments. *Chemosphere* 39 (3):477-492 (1999). EPA/600/J-02/145. 8/1/1999  
**Contact:** Robert B. Ambrose
- Susarla, S., Collette, T.W., Garrison, A.W., Wolfe, N.L., and McCutcheon, S.C. Perchlorate identification in fertilizers. *Environmental Science & Technology* 33 (19):3469-3472 (1999). EPA/600/J-02/191. 10/1/1999  
**Contact:** Steve C. McCutcheon
- Zacharias, S., Heatwole, C.D., Persaud, N., Bruggeman, A.C., Kumar, D., and Smith, C.N. Stochastic simulation of field-scale pesticide transport using OPUS and GLEAMS. *Journal of Environmental Quality* 28 (2):411-423 (1999). EPA/600/J-02/195. 3/1/1999  
**Contact:** Charles N. Smith
- Smith, C.N., Payne, Jr., W.R., Pope, Jr., J.D., Winkie, J.H., and Parrish, R.S. A field study to compare performance of stainless steel research monitoring wells with existing on-farm drinking water wells in measuring pesticide and nitrate concentrations. *Chemosphere* 38 (4):875-889 (1999). EPA/600/J-02/194. 2/1/1999  
**Contact:** Charles N. Smith
- Molina, M., Araujo, R., and Hodson, R.E. Cross-induction of pyrene and phenanthrene in mycobacterium sp. isolated from polycyclic aromatic hydrocarbon contaminated river sediments. *Canadian Journal of Microbiology* 45 (6):520-529 (1999). EPA/600/J-02/198. 6/1/1999  
**Contact:** Marirosa Molina
- Burke, Jr., R.A., Meyer, J.L., Cruse, J.M., Birkhead, K.M., and Paul, M.J. Soil-atmosphere exchange of methane in adjacent cultivated and floodplain forest soils. *Journal of Geophysical Research* 104 (D7):8161-8171 (1999). EPA/600/J-02/193. 4/1/1999  
**Contact:** Roger A. Burke
- Lewis, D.L. A sterilization standard for endoscopes and other difficult to clean medical devices. *Practical Gastroenterology* 23 (1):28-56 (1999). EPA/600/J-02/144. 10/15/1999  
**Contact:** David L. Lewis

# ***NERL/ERD Publications***

*Technical Information Manager: Janice Sims (706) 355-8011 or E-mail [sims.janice@epa.gov](mailto:sims.janice@epa.gov)*

**Jan 1, 1999 - Dec 31, 1999**

***Presented Published***

Lewis, D.L., Garrison, A.W., Whittemore, A., Wommack, E., Steudler, P.A., and Melillo, J.M. Influence of environmental changes on degradation of chiral pollutants in soils. *Nature* 401 (6756):898-901 (1999). EPA/600/J-02/143. 10/28/1999

***Contact:*** David L. Lewis

Richardson, S.D., Thruston, Jr., A.D., Caughran, T.V., Chen, P.H., Collette, T.W., Floyd, T.L., Schenck, K.M., Lykins, Jr., B.W., Sun, G.R., and Majetich, G. Identification of new ozone disinfection by products in drinking water. *Environmental Science & Technology* 33 (19):3368-3377 (1999). EPA/600/J-02/199. 10/1/1999

***Contact:*** Susan D. Richardson

Richardson, S.D., Thruston, Jr., A.D., Caughran, T.V., Chen, P.H., Collette, T.W., Floyd, T.L., Schenck, K.M., Lykins, Jr., B.W., Sun, G.R., and Majetich, G. Identification of new drinking water disinfection byproducts formed in the presence of bromide. *Environmental Science & Technology* 33 (19):3378-3383 (1999). EPA/600/J-02/200. 10/1/1999

***Contact:*** Susan D. Richardson

Richardson, S.D., Collette, T.W., Price, P.C., Genicola, F.A., Jenks, J.W., Thruston, Jr., A.D., and Ellington, J.J. Identification of drinking water contaminants in the course of a childhood cancer investigation in Toms River, New Jersey. *Journal of Exposure Analysis and Environmental Epidemiology* 9 (3):200-216 (1999). EPA/600/J-02/196. 7/1/1999

***Contact:*** Susan D. Richardson

Richardson, S.D. Water analysis. *Analytical Chemistry* 71 (12):181R-215R (1999). EPA/600/J-02/148. 6/1/1999

***Contact:*** Susan D. Richardson

## ***RESEARCH RPT***

Susarla, S., Bacchus, S.T., McCutcheon, S.C., and Wolfe, N.L. Potential species for phytoremediation of perchlorate. Athens, GA: US Environmental Protection Agency. 1999. EPA/600/R-99/069 (NTIS PB2000-102483). 8/15/1999

***Contact:*** Steve C. McCutcheon